The Builder.

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Architecture at the Royal Academy.

ARCHITECTURE has now for the first time a gallery of her own in the great art show at Burlington House. Though designed by Mr. Norman Shaw, it has none of the characteristics of that rare artist, and is far less ornate than the twin Water-colour Gallery by the same hand. The room is not large; but it will serve. In plan it is an irregular octagon, a figure which is better adapted to the display of pictures than a rectangle, with its comparatively obscure corners. The canted sides are carried up some 10 ft. in height, and the enclosed triangles afford the means of admitting fresh air *à la* Tobin. The floor area is less than in the old room; but as there is only one door instead of two the available wall-length is about the same. The height has, however, been very considerably reduced, being now only some 13 ft. or 14 ft. from floor to cornice. The walls will, therefore, accommodate four tiers of pictures at the most. This is, on the whole, a gain. Architectural drawings should be placed where architectural detail can be seen, and it is better that they should be rejected outright than contemptuously "skied" as of yore. In future the larger the drawing the less its chance of acceptance. Inordinate size alone has this year, it is believed, led to the exclusion of a great number of important and meritorious works. Intending exhibitors will thank us for the hint. It is better that the drawings should be rather choice than numerous. If every good architect would annually put his strength into one good drawing, instead of sending half a dozen indifferent ones on the chance of one getting hung, the Architectural Room would prove as attractive as any other in the building. Architecture is every year appealing to wider audiences, and meeting with a more intelligent appreciation. It remains for the architectural profession to turn the newly-awakened interest to the best account. As to which one word of warning may here be not inaptly spoken. The old room was a thoroughfare, and could not be altogether ignored; the new one is a *cul-de-sac*, and may be. Whether it shall be or not depends upon ourselves. *Verbum sap.*

The present exhibition consists of 220 drawings, and the majority of them possess very considerable merit. The line centres of the three sides are respectively occupied by Mr. Waterhouse's New Liberal Club in Whitehall-place, of which we shall give a fac-simile next week; by Mr. Aitchison's Royal Insurance Offices, Pall Mall; and by Messrs. Aston Webb and Ingress Bell's premiated drawings of the proposed Admiralty and War Office buildings. It is noted,—not without surprise,—that, with the exception of a small sepia study by Mr. Marvin, this is the only representative of that quite recent and most exciting competition. Mr. Waterhouse's and Mr. Aitchison's designs are each flanked by careful drawings by Mr. Pearson,—one showing his proposed spire at Peterborough, and the other his proposed additions to Westminster Hall. Mr. Norman Shaw sends nothing this year, and his absence is sorely felt. Mr. Brooks sends a couple of churches marked by that masculine treatment which always distinguishes his designs; and Mr. Sedding has several ecclesiastical studies, which are both artistic and original. The Badminton Club in Piccadilly, and a very small portion of the new Conservative Club, are all Mr. Edis contributes this year. Mr. Blomfield has an elaborate drawing of his proposed work at Chester Cathedral, and Mr. Jackson several drawings showing his perfect mastery over that picturesque Early English Renaissance which he knows so well how to employ. It is needless to say that Messrs. Ernest George & Peto are as captivating as ever with a long series of domestic works, designed in the finest manner and piquantly set forth in brown line and wash. Why is it that, notwithstanding all this artistic cleverness, there is on paper, and on paper only, a forlorn look about their works? The "family" invariably out of town and slatternly servants for ever idling in picturesque lassitude in the dark recesses of the open doorways? Mr. Collcutt's "Business Premises in Oxford-street" is sent up aloft in company with Mr. J. O. Scott's design for a reredos for Canterbury Cathedral. The latter is a brilliant water-colour drawing, and gains perhaps by this enforced remoteness, but the other is in the (too) fashionable pen-and-ink manner, and is absolutely a blank. Mr. Ernest Newton, Mr. E. J. May, and other architects of their school, send the usual crop of clever designs which differ only in their titles from the previous works of the same artists. The timber gables, the bargeboards and finials, the oriel windows, the cramped doorways, the dodgy little summer-houses and pavilions, nay, the very trees which garnish their designs, are all old favourites, and greet us with familiar looks. Mr. Halsey Ricardo repeats this year that severe and dignified manner which was noticeable in his house for Mr. Justice Bowen last year; comfortable, modest, English homes are these; and Mr. Coad shows us in several brilliant drawings what he is doing at Lanhydrock. A design for a Military Hospital (in a hot climate), by Major-General Sir Andrew Clarke and Mr. Ingress Bell, is an important and novel contribution. It is not so much a building as an assemblage of buildings of enormous extent and, apparently, costly character, carefully designed, and grouped impressively along the summit of an almost barren rock.*

There is a perplexing ambiguity about some of the subjects exhibited. "St. Saviour's Church" is all that we are told about one design. Of another we cannot be sure whether it is simply a study of an old church, or an old church restored, and the restored portions not distinguished from the rest; or a new church drawn in such a way as to simulate the stains and scars of time. Still more bewildering is a drawing of a sixteenth-century hall, known and dear to us, coupled with the name of a living architect. We have sketched it more than once, and our sketches upon comparison tally with the drawing. In what relation, therefore, does the modern architect stand to the ancient hall? There is a good deal of merely representative draughtsmanship in the exhibition, and its presence leads to the suggestion that some distinction should, if possible, be made between drawings which are merely transcripts from old work and architectural *designs*. We should have some means of knowing in what capacity the author in each case is supposed to figure,—that is, of course, where there is reasonable room for doubt. Tom Pinch may sign all his drawings of Salisbury Cathedral and no one will for a moment accuse him of taking a liberty; but there are cases in which the little abbreviation, "del.," would make matters much clearer.

In brilliant and beautiful draughtsmanship the exhibition is particularly strong. Nothing of the kind has ever been better done than Mr. Barratt's Ruskin-like Italian studies, or Mr. Reginald Blomfield's tender pencillings, or Mr. Raffles Davison's poetical rendering of Miss Kate Greenaway's charming country-house, which looks as if it had stepped bodily out of her own pretty pages. Mr. Horsley and Mr. Flockhart and Mr. H. W. Brewer send drawings which, in their several manners, have never been surpassed; and the unusually numerous studies in decoration and designs for stained glass are also this year of unusual excellence. In subsequent articles we intend to take up the consideration of the several

* This also will be represented in our illustration pages next week. We purposely avoid giving any illustrations of the architectural work at the Academy until the exhibition is open to the public.

designs in detail. Meanwhile, without ignoring the very obvious amount of youthful talent which is pressing forward and every year making itself felt, we cannot but note regretfully the losses we have lately suffered, and feel more and more how great our losses really are.

THE HISTORY OF FREEMASONRY.*

BY WYATT PAPWORTH.

CHAPTER XIV. is reserved for the further consideration of Ashmole's "Diary," the entries in which relating to Freemasonry "are of the greatest importance in our general inquiry, since, on a close view, they will be found to supply a quantity of information derivable from no other source, and which, together with the additional evidence I shall adduce from contemporaneous writings, will give us a tolerably faithful picture of English Freemasonry in the seventeenth century." The first entry, the account of his initiation in 1646, has been carefully investigated, and "the composition of the Lodge" thoroughly overhauled by Mr. W. H. Rylands, through whose researches "a flood of light was suddenly shed on the subject, and who has so far proved the essentially speculative (or non-operative) character of the Lodge, as to render it difficult to believe that there could have been a single operative mason present on the afternoon of October 16th, 1646." Mr. Rylands has looked up the history of each of the seven brethren present,—one of whom was the warden,—who admitted Ashmole and Colonel Mainwaring on that eventful day :—

"Concurrently with this there is the valuable evidence of the MS. Charge in the Sloane Collection, No. 3,848,† which bears the attestation of one of the seven members, with the same year, 1646, month, and day. . . . . Thus we should have speculative, and, it may be also, operative masonry, co-existing with the actual use, by Lodges and brethren, of the scrolls or constitutions, of which this Sloane MS. affords an illustration in point. . . . . We continue to direct our course up the stream of Masonic history, the evidence of manuscript constitutions successively dating further and further back, until the transcripts are exhausted, without apparently bringing us any nearer to their common original, may well leave us in doubt at what point of our research between the era of the Lodge at Warrington, 1646, and that of the *loge* at York, 1355, a monopoly of these ancient documents by the working masons can be viewed as even remotely probable."

Why this *loge* at York should have been brought in here is somewhat puzzling. The lodge at Warrington may have been only a speculative one, but certainly the *loge* at York was only a practical one, confined to the operative masons at York Cathedral, and meaning their workshop. To the entry of 1682 in Ashmole's Diary, a similar careful scrutiny is applied, with the interesting result that of the six new members then admitted into the "Fellowship of Freemasons," two were members of the Masons' Company in London, the nine others present were members of that body (the Masons' Company), and then there remains only Ashmole to make up the sixteen present "at the noble dinner prepared at the charge of the new-accepted masons."

We need not discuss the several coats of arms granted to the "Hole Crafte and Felawship of Masons," in 1472–73 to the Masons' Company of London, confirmed 1520–21, and entered in the Visitation of London in 1634. Two existing MS. Charges, both dated 1686, have the coat of arms as figured by Stow in 1633 (*i.e.*, the chevron plain, not engrailed), and "are associated with the arms of the City of London, proving beyond doubt that both these rolls, which are handsomely illuminated at the top, were originally prepared for London Lodges of Masons or Freemasons," writes Mr. Gould; but this passage appears to be somewhat vague, and, to prevent error, it is suggested that they were originally prepared for the Guild of Masons, or, perhaps, for two members of the Guild or Company of Masons of London. We may both mean the same, but the wording differs.

Further on Mr. Gould records how he has discovered that "Robert Padgett, Clerk to the Worshipful Society of the Free Masons of the City of London in 1686," whose name appears appended to the MS. Constitutions in the possession of the present Lodge of Antiquity, was not the Clerk of the Masons' Company, which company possesses an "Accompte Book," and under the date 1687 occurs: "Mr. Stampe, Clerk," . . . which establishes the fact that the "Worshipful Society of the Free Masons of the City of London" and the "Company of Masons" in the same city, were distinct and separate bodies. Mr. Gould is to be congratulated on making this very decisive discovery, proving, as it does, that there were two co-existing bodies of Masons and Freemasons as "distinct and separate sodalities." It is also assisted by the investigation into the persons attending at Masons' Hall in 1682 as just narrated. Mr. Gould, after stating that by all writers alike no adequate distinction between the Freemasons of the Lodge and those of the Guild or Company has been maintained, notes that the above-named "Accompte Book" specifies that from 1620 to 1653 the members were styled Freemasons, and then goes on to quote numerous later instances of the use of the term, but to the reviewer he appears either to mingle the uses of the term, or wishes to show that although a man was an operative mason he could become a Freemason by joining a Company of Trades, as at Oxford and Newcastle; yet he candidly admits that in the Gateshead register the two terms are taken as words of indifferent application. This might very likely be the case at the present day, even with the full knowledge of the presence in the town of a Lodge of modern Freemasons, and probably for that very reason! The archives of the City of London were searched in 1879 by one of Mr. Gould's friends for early instances of the terms, "Mason and Freemason," but apparently only the already known example, dating 1376-77, was found for the latter term, with "Masoun" in Norman French, and "Cementarii" in Latin, previously. He remarks on the earliest use of the expression as yet found in *connexion with actual building operations*, that is, in 1396, in the document in the Sloane Collection, No. 4,595, p. 50 (which fact was published by the reviewer above twenty years since, who lately communicated the full reference to one of Mr. Gould's friends who was assisting him), and then follow many later examples of the uses of the word. But surely the word used in 1376 in connexion with the Guild of Operative Masons is as good as the other reference of twenty years later, and both are Freemasons by trade. It would require a long research to ascertain whether these terms given by the author from tombstones, registers, and documents, after, say, 1700, relate to the Guilds or to the Society. The question for solution is, "Is there any instance of the term Freemason being put into a register or on a tombstone when the person has not been a mason by trade?" The more modern letters R.A., F.S.A., and so on, are often seen on tombs. The derivation of the term "from Freestonemason, Freemanmason, and Freemason, or free of a Guild or company, will," he thinks, "afford satisfaction to every class of theorist," and "it lies within the category of Masonic problems."*

Another use of the word "fre-mason" of the date of about 1383, or a little later (fitting in between the two dates above referred to), was accidentally discovered by me only at the end of last September; it is used by no less a person than the Reformer Wiclif, in the following treatise :—"The Grete sentence of Curs expounded," printed in Arnold's edition of "Select English Works," by Wiclif, 8vo., 1869-71, iii., 333, cap. xxviii. :—

"Alle false conspiratours ben cursed of God and man. . . . Alle new fraternytes or gildis maad of men. . . . Also men of sutel crafte, as fre masons and othere, semen openly cursed bi this sentence. For thei conspiren togidere that no man of her craft schal take lesse on a day that thei setten, though he schulde bi good conscience take moche lesse, and that noon of hem schal make save trewe work to lette othere mennes wynnyng of the craft, and that non of hem schal do ought but only hewe stone, though he might profit his mastir twenti pound bi o daies werk bi leggyng on a wal, withouten harm or penyng himself. See hou this wickid peple conspireth agenst truthe and charite, and comyn profit of the lond, and ponyschith hem that helpen frely here neigeboris."

This was written probably in 1383, the year before Wiclif's death, but possibly may be by a somewhat later hand. The MS. is stated to be in Corpus Christi College, Cambridge. This extract is interestingly illustrative, and confirmatory, if that be needful, of the popular outcry against many of the trades, and of the masons in particular, necessitating the Statutes of 1350-1, 1360-1, and later years, the inquiry into which has formed a valuable chapter in the previous volume;* it also proves the application of the word Freemason to the practical man, and not to the speculative, *i.e.*, Society of Freemasons. Mr. Gould points out fairly the non-use of the term Freemason among the masons employed at York Minster, even when quoting one instance as late as 1522-3, qualified by his previous statement that "it is sufficiently clear that in the fiftieth year of Edward III. (1376-7) there was a use of the term Freemason, and that the persons to whom it was applied were a section or offshoot of the Masons' Company, though in either case probably reabsorbed within the parent body," which, he goes on to say, was effected, as may be proved by the words of Stow in 1633, "the masons otherwise termed Freemasons," and the existing tomb of William Kerwin, Freemason, of 1594, having the *original* coat of arms of the Masons' Guild, or Company, cut on it. "My contention is," writes Mr. Gould, "that the class of persons from whom the Freemasons of Warrington, Staffordshire, Chester, York, London, and their congeners, in the seventeenth century, derived the descriptive title which became the *inheritance* of the Grand Lodge of England, were *free men*, and Masons of Guilds or Companies"; and a note seems to explain that he means that they possessed the freedom of the city. And further, "as cumulative proofs that the Society of Freemasons has derived its name from the Freemen-masons of more early times, the examples in the Scottish records have an especial value." From this statement the reviewer presumes he means that a "free-gentleman" (that is, one free of the town) joining a lodge or guild of Masons, becomes a Freemason, and hence a member of the Society of Freemasons!

He then reverts to Ashmole to discriminate between his *undoubted* testimony and the opinions which have been *ascribed* to him. A very interestingly written research, but one which it is needless to revert to here, is therefore "taken as read." Dr. Plot's account of the Freemasons, 1686, follows; he, Plot, observed "that St. Amphibalus by judicious persons is thought to be rather the cloak than the master of St. Alban," a suggestion which is not so modern as has been supposed. Mr. Gould is not inclined to admit it, and writes,—"All accounts concur in representing St. Amphibalus as a priest or missionary from Rome. To suppose that this personage was merely the cloak of St. Alban. . . . is the ridiculous assumption of self-opinionated critics," is his severely-worded comment. He refers to Antoninus Bassianus being called "Caracalla" (a short Gaulish cloak); and that "Amphibalus would signify a long ample garment, such as a pilgrim might naturally carry with him." But Dean Stanley, in the *Contemporary Review*, February, 1875, p. 480, states that "the caracalla, a long overall, was corrupted into casacalla, casaca, and cassock; it had a hood," and was "called in Greek *amphibalos*, and as

* The History of Freemasonry: its Antiquities, Symbols, Constitutions, Customs, &c., derived from Official Sources. By Robert Freke Gould, barrister-at-law, Past Senior Grand Deacon of England. 4to. London: Thomas C. Jack. 1884. Vol. iii., 248 pages. See p. 574, *ante*.

† See p. 65 of vol. i. of this "History."

* I cannot help still believing that my discovery, about twenty years since, of the document of 1396, showing that the Latin term "*lathomos*" was rendered "ffre Maceons" in the same line, is indisputable. The Latin words "*lathomi*" and "*cementarii*" are used previously. I had also referred at the same time to the list of 1376-7, as above stated.

* The Statutes relating to the Freemasons, ii., 328-380.

such appears in the account of the persecution of St. Alban (Bede, H. E., i. 6), where by a strange confusion the name of Amphibalus has been supposed to represent the name of a saint." Who shall decide when such learned men disagree so entirely? Then follows the inquiry into Dr. Richard Rawlinson; and into the three Randle Holmes with the *Academie of Armory* in 1688, in which occurs the term "Free Masons—Stone Cutters." I do not make out from the text of our author whether he considers the "Fraternity, Society, Brotherhood, or Company," &c., to use the words of Randle Holme, applies to a Guild or to the Society of Freemasons, which it is now to be recognised as in existence in 1688, or whether one of the Holmes has himself muddled up the two together. Mr. Gould desires to prove, however, that "the author of the *Academie of Armory*," the Freemason of Chester Lodge, and the copyist to whose labours we are indebted for the form of one of the Old Charges, now the Harleian MS. 2054, was one and the same person"; and this MS. is wished to be dated 1625, 1650, or about 1665, which latter would be midway between those of 1646 and 1686. In the same volume of MSS. in the British Museum, is a form of oath to be taken by a Freemason about "several words and signs"; and the next leaf contains MS. entries relating, it is supposed, to the Chester Lodge, which are considered with great scrutiny by the author, rendered easy by the labours of his friend Mr. Rylands, who has obtained from the Chester Register of Wills some verification of the twenty-six names contained on the leaf above mentioned, four of whom were actually "Masons," and the whole number in the list may have belonged to a "Society of Freemasons" of Chester.

Our author next groups the several versions of the Old Charges or Constitutions into six classes or divisions, to show the relative estimation in which,—according to his judgment, —they should be regarded as authoritative or accredited writings. Then follows the description of the two plates of coats of arms of English and foreign companies of masons, carpenters, and other trades given for comparison, of which it is only needful to notice that the engrailed chevron in the coat of arms granted 1472-3 to the London "Guild of Masons, otherwise called Freemasons," became a plain one, as noticed by Stow in 1633. Was the latter *assumed* by the Society Lodges, and he (Stow) did not observe the difference?

Chapter XV. is devoted to Old Charges, the Legend of the Craft, Light and Darkness, Gothic Traditions. These "Old Charges," Mr. Gould states, are "the title deeds and evidences of an inherited Freemasonry; they would amply reward the closest and most minute examination." This cannot here be given to them. He, however, found it necessary to give a severe scrutiny to the "Harleian MS., 1,942" (11), dating seventeenth century, and the "Roberts MS." (44) of the same period, the latter being, in his opinion, a reproduction or counterpart of the former, and "both parent and progeny stand on the same footing of unreality." They are interesting as differing from all the other Charges known, in that the former contains "new articles," which form its distinctive feature; and the question arises with him, if No. 1,942 "is an authorised and accredited reading which has come down to us through a legitimate channel": "the Roberts text .... stands upon the faith of the compiler" .... "27th December, 1663, when the *six regulations* were made, of which only the first *five* are given" in No. 1,942, though all are duly shown in Roberts's. No exact date can be given to No. 1,942 .... its age, I think, "cannot be fixed any *later* than 1670. (Mr. Bond, principal librarian of the British Museum, estimates it as of "the beginning of the seventeenth century.") "These 'New Articles' I cannot explain [he says], nor in my judgment is an explanation material; it also contains 'The Apprentice Charge,' which is peculiar to a few versions only." But the reviewer would ask, Is the oath more than the affirmation now taken by a newly-elected Liveryman on his entering a London Guild? and would submit for Mr. Gould's consideration that this 1,942 Charge may have belonged to an independent Lodge in town or country, knowing nothing of other Lodges. The history of the Society itself is only now being thoroughly elucidated through the comprehensive grasp of mind of Mr. Gould and his friends, and, as before observed, it is not known to whom belonged these thirty-one copies of the "Old Charges or Constitutions,"—perhaps some to the Guild, some to its members, and some to the Society, the Lodge, or member of the Lodge. As before observed, the City arms, and the Masons' coat of arms, appear on some, as the latter does in No. 29, of about 1714, in my possession. It is *known* that a "parchment book containing an 113 annals of the antiquity, &c." was, before 1839, in the possession of the Masons or Guild or Company of London, and is classed by Mr. Gould as one of the number. Mr. Gould quotes "the Masonic tradition that prior to 1567 the whole of England was ruled by a single Grand Master," but does not state of what, and also seems to concur with his friend that "the Grand Lodge MS. Constitution (4) 'dating 1583,' or a previous draft originated all Constitutions (except 3 and 23), whether in Yorkshire, Lancashire, Scotland, or South Britain."

Among other subjects considered in this elaborate "History," as a necessary part of the inquiry, are the Mysteries,—of Egypt, the Ritual of the Dead, the Profession of a Benedictine Monk, Degrees, Symbols, Metaphors, and Emblems of the Freemasons; Lodge Elements and Appointments (but when invented?), Vehmic Tribunals, Dr. Armstrong and his Notions and Opinions, and the Opinions of "Dr. Leeson, Most Puissant Sovereign Grand Commander 33°, read before the Royal Naval Chapter of Sovereign Princes of Rose Croix in 1862" (!); also Fort's work, mentioned above, of which our author writes, "he has succeeded where all his predecessors have failed,—that is, in rendering the study of our antiquities an attractive task. .... He does not wish to say that Fort has withheld information from his readers; but having clearly established in his own mind certain *facts*, these appeared so incontrovertible as to justify the exclusion of the details by which they were supported. But no one, I am sure, would more heartily concur in the golden rule of criticism, that TRUTH is the great object to be sought, and not the maintenance of an opinion, because it was once expressed." Mr. Gould remarks further on:—"Indeed, many of the Rites, Symbols, and Beliefs *now* prevalent among Masons, correspond with or are analogous to those supposed to have been common to the members of earlier and distinct societies." In a future chapter we may read when they were invented or introduced among the moderns. He, however, does add:—"To what extent these or any other portions of the existing Lodge ceremonial are *survivals* of more ancient customs, cannot be very accurately determined." But could they not all have been *invented* or *manufactured* as necessity required at or after 1717.

We are promised in the next volume (of which three more are due) an examination into the character of the Freemasonry which existed *after* the era of Grand Lodges; the proceedings of the few Lodges that can be traced between 1686 and 1717; as well as a comparison of the Masonry of Scotland with that of England; and also the question of degrees. During the careful perusal of this volume it has appeared very desirable that, besides an elaborate index to the whole work, a chronological list should be added of the dated facts laid before the readers, facts which Mr. Gould has shown that he knows well how to use and work in, in all their bearings one with another.

Turnstiles at the Inventions Exhibition.—Messrs. C. Isler & Co. have received orders from the Executive Council of the Inventions Exhibition to fix eleven more of their turnstiles, making a total of twenty-six. Fourteen are to be fixed in the subway (these are so arranged that they will register the number of persons going in and coming out) and twelve at the Exhibition entrance.

THE GROSVENOR GALLERY.

THERE have certainly been finer exhibitions at the Grosvenor Gallery than the present one, though it contains works of great interest, and some of the highest artistic power. The absence of Mr. Burne Jones deprives the exhibition to some extent of the peculiar *cachet* which has usually seemed to mark the Grosvenor collections as distinct in tone and feeling from other exhibitions of the day; and some of the most powerful works exhibited would have found their place as naturally at Burlington House as in Bond-street,—a fact which will be rather welcome than otherwise to those who look doubtfully upon affectation in art, even when it is the affectation of genius. Among those works which appeal to us by genuine and straightforward power none can rank higher than Mr. Millais's splendid portrait of Mr. Gladstone (54), a strange and remarkable contrast to that other portrait of the Premier which was in the Academy some little while back, and which has become the most popular and widely-accepted representation of the eminent Statesman. That three-quarter length portrait, in standing attitude with the hands clasped, represented the contemplative, it might even be said the pathetic aspect, of Mr. Gladstone's character; the present one, in which he is represented seated and in scarlet robes, with the face turned towards the spectator, is eager and energetic in expression. The other was all dark in colour; this is all brightness, but the artist has been quite successful in the difficult task of harmonising the face with the mass of warm colour in the costume, without unduly heightening the flesh tints,—how successful may be the better understood by contrast with the similar attempt made by Mr. Barrett Browning, in his portrait of his father in similar robes of collegiate dignity, where the great poet, in order to assimilate him to the costume, is represented with a countenance suggestive of much libation to Bacchus. So many-sided a man as Mr. Gladstone (to return to the immediate subject) could never be represented by a single portrait; but it is remarkable that one painter should succeed in realising, with equal power, two such different phases of character in the same person; or it would be remarkable, if the painter were not Mr. Millais.

Mr. Watts's "Love and Life" (30), if it be really meant, as has been affirmed, as a companion to "Love and Death," is far below that great work in artistic power and feeling. "Life" is represented by a thin figureless female, ascending a rocky steep, and ready to faint, as her countenance expresses, unless upheld by the winged figure of love at her side. The allegory is well brought out; the picture is pathetic in a sense, but it is weak; "Love" is not strong or dignified, "Life" is painfully limp and feeble; even Love can hardly do much for such a Life. It is a very high aim, of course, and let us be grateful to a painter who always aims so high that it is no wonder if he sometimes comes short of his ideal. The opposite end of the room is occupied by a remarkable work by a painter not as yet known to fame, Mr. Mitchell, who has chosen for his subject that terrible moment when Hypatia, as described in Kingsley's semi-historical romance, stood on the steps of the altar making one last appeal for mercy to the mob of bigots who were bent on her destruction. The painter omits the monkish throng, however, showing us only Hypatia herself on the altar-steps,—a figure thoroughly studied in drawing and execution, and very pathetic in expression: perhaps the countenance does not convey all the terrors of the situation; but this, as well as the omission of her blood-thirsty persecutors from the scene, may have been intentional, in order to avoid a lapse from the pathetic to the purely painful. At all events, the painting is one which will make every one look with interest to the future productions of its author. The third central picture of the large room is Mr. Richmond's "An Audience in Athens during the Representation of the Agamemnon" (69), at the moment when Clytemnestra recounts how she

slew her husband. The spectator faces the audience, the scene being behind him. The idea of representing the play of feeling in the faces of the spectators at this stage of the tragedy is a very fine one, and there is much in the various countenances that is expressive and worthy of careful attention; but the picture is not life-like; the men and women do not appeal to our sympathies much. The composition is backed by a double Ionic colonnade skirting the circumference of the auditorium,—a scenic addition which has a good effect on the composition, but for which, as a portion of a Greek theatre, there is no architectural authority.

The charge of unreality cannot at least be brought against the two other much smaller antique subjects on the same wall, the two brilliant little works by Mr. Alma Tadema, entitled "Who is it?" (57) and "Expectations" (81). In these works the realisation of antique life, not only in the accessories but in the figures, is so complete that we feel as if the lapse of time was annihilated for us,—as if we really beheld that old-world life in its reality. In "Expectations," in which a young woman sits on a marble seat overlooking the dark Ægean sea, shading her eyes with her hand to look at a boat in the distance, the artistic effect and feeling is the most clear and complete of the two; but both are remarkable works, such as none of the artist's now rather numerous imitators have in the least degree approached. The perfect drawing and perspective of all the architectural details is as noteworthy in these as in other more elaborate works by the same hand.

In the East Gallery Mr. Walter Crane exhibits one of the largest and finest paintings he has produced,—"Freedom" (157),—illustrating a splendid passage from Swinburne's "Songs before Sunrise." A nude figure in the foreground, who has been fettered by the influence of priest and king on either side of him, is hailed by the winged genius of freedom, at whose call his fetters drop off. We are not over fond of allegorical paintings, but this has the merit of thoroughly telling its story and producing a remarkably fine decorative *ensemble* at the same time. Mr. Crane's other work, "Pandora" (16), is hardly a success; the attitude of the figure is rather painfully contorted, and the drawing of the head, bowed forward so as to hide the face, is not quite successful.

After these, the remaining portraits are the most noticeable works. Next to those already mentioned, perhaps Mr. Holl's "The Late Lord Overstone" (33) is the finest work; with just a suspicion of *chic* in the sparkle of the high lights, this is nevertheless a wonderfully solid and real portrait, of which the face is painted with splendid finish and expression. Mr. Watts's "Miss Rachel Gurney" (62) is a beautifully-refined and characteristic portrait, a half-length, showing the lady in black half-leaning against a wall or screen behind her. Mr. Lehmann's portrait of Mr. Browning (10), hung as a pendant to Mr. Barrett Browning's painting before alluded to (with unhappy result to the latter) is an excellent likeness, and a good example of simple and unaffected portraiture. Among other portraits may be named Mr. Watts's "Mrs. F. Myers" (140*), a beautiful bit of colour; Mr. Collier's "Lady Loraine"; Mr. Stuart Wortley's "Miss Maud Waller" (161), an admirably-painted portrait of a young girl; Mr. Richmond's "Mr. A. Lang" (191) and "Lady Lloyd Lindsay" (174); and Mr. C. E. Hallé's portrait of Mr. Chas. Hallé (209), more remarkable as a likeness than for artistic effect, but certainly excellent in the former sense.

Mr. Nettleship, the animal-painter *par excellence* of the Grosvenor contributors, sends a very large painting,—"Refuge" (195),—of a lion and family who have got into a safe place from a jungle fire, joined by one or two more harmless animals which have forgotten their fear of the lions in the common danger. The big lion is a very fine beast, but his body seems rather lengthened out in perspective, considering the angle at which he is seen. In his peculiar faculty of conveying animal character, the painter is more completely successful in his smaller work, "Bruin" (134), which is about the most bearish bear we remember to have seen on canvas.

Landscape is seldom very strong at the Grosvenor, and is less so than usual this year. Mr. Keeley Halswelle's "Kilchurn Castle" (8) is the most important work, and is remarkably effective in a sense; but the effect, with the hard-looking steel-like surface of the lake, is of the theatrical kind. Mr. Hemy is less successful than usual in two rather large works; in "Homeward" (26), one of his favourite class of works, the water seems somewhat solid and un-watery. In "A Kerry Pastoral" (41) Mr. Mark Fisher's unfortunate tendency to what may be called dirty tones and consequent want of light reaches a climax, and it is impossible to accept this as a representation of outdoor effect. Mr. Henry Moore's "Queen of the Night" (120) is a really fine effect of moonlight on the sea. Mr. Watts sends a remarkable study of dark mountains, under the title "Ararat" (172).

Among the portraits we should not have omitted Mr. Tadema's "My Doctor" (1), obviously a portrait, where the doctor sits by a bedside feeling the pulse of a patient whose face is not shown. Mr. Holman Hunt contributes a head of a woman under the title "The Bride of Bethlehem" (14), a singularly unhappy-looking bride, whose face is finished with that hard and over-wrought minuteness of detail which has been the artist's great stumbling-block, and seems to petrify all the life out of his faces. Reverting to the absence of Mr. Burne-Jones from the exhibition, it may be observed that Miss Pickering seems to have regretted this in anticipation so much as to have endeavoured to fill the gap by producing a Burne-Jones painting herself, in the shape of "A Dryad" (43), and really with no bad success.

NOTES.

THE result of the Archbishop's charge in reference to Peterborough Cathedral, on which we commented last week, seems to have been wonderfully pacifying. It is understood not only that the first part of Dr. Benson's advice, to reconstitute the committee, is to be acted upon, but that his licence to then reconsider the whole question, independently of his judgment, will not be accepted, and that the rebuilding of the tower on its old lines will be adopted in accordance with his opinion. Even Sir E. Beckett, that champion of the modern architect against the errors and superstitions of archæology, has given no open sign of rebellion against "the Archbishop's most fatherly of rebukes," and might, perhaps, express his attitude in a slightly altered version of the words of the Psalmist,—"I kept silence, even from bad words, but it was pain and grief to me." So we are all going to be good boys, and do as we are told. Let not a word be said here to disturb such an unexpectedly harmonious state of things. Perhaps, when the work is done, there may arise in some minds a qualm of conscience,—a dim perception that a great opportunity has been missed. A Mediæval architect would have felt so, at all events. But then, of course, we are not Mediæval architects: Q. E. D.

THE meeting held at Willis's Rooms on Friday last, "inaugurated" (to use the Chairman's expression) a new departure in land-holding. "The Small Farm and Labourers' Holding Company, Limited,"—a cumbrous title for a simple undertaking,—has been started with something more than expressions of goodwill on the part of its aristocratic backers. Sir R. Loyd Lindsay offered the company, on its own terms, a suitable estate of 400 acres in Berkshire, and the Duke of Argyll, in his interesting and somewhat autobiographical speech, indicated the county of Essex as a very eligible field for the company's operations. Some reference was made by Lord Ripon to an experiment of a similar kind made at Rallaheen, in Ireland, some fifty years ago, and also to what Mr. Bolton King has set on foot with no little success in Warwickshire, but none of the speakers said a word about what Mr. Gurdon had effected by co-operative farming on his estate at Assington. His plan would seem to suit the temper of the times better than that of Lord Tollemache, where the feudal principle is still maintained, though tempered with so much justice, liberality, and common-sense as to win the approbation even of Mr. Chamberlain. The Peckforton estate is probably the only one in England on which are to be found no less than 270 cottages, with *three acres of land attached to each*. These Cheshire cottagers are, however, exceptionally fortunate, not only in their landlord and in their holdings, but in having good markets close at hand for the disposal of their produce and, above all, grass land suitable for dairy purposes. The cow is to them what the pig is to the Irishman,—a source of income and an object of interest. But, of course, these favourable conditions are not to be found in all parts of England, even where the landlord is as well disposed towards his tenantry as Lord Tollemache has shown himself to be. The country clergy, who are often at a loss how to let or to cultivate their glebes, might do much to encourage peasant proprietorship, and in so doing regain the influence over the labourer which has been largely lost. Co-operation would unite classes which have been getting wider and wider apart, and a new link would be forged which would attach the labourer to the soil and prevent him from injuring his fellows by seeking work in our already over-stocked towns.

IN the Annual Report of the Institute of British Architects, the substance of which will be found in another column, one or two facts are noted which will be received with regret by those who wish well to the Institute and to the higher interests of the profession. One of these is in regard to the non-appearance of any competitors for the Grissell Gold Medal for the last two years. This medal is really one of the most valuable offered by the Institute, being, as it is, especially designed to encourage the detailed study of construction. The neglect of it by the students and younger members implies that they care more to excel in competitions in draughtsmanship and in the external appearance of buildings, than in matters relating to scientific construction. This is putting the cart before the horse, and is not the way to raise the future profession of architecture in public confidence. The failure of the essay prize, though a matter of much less importance, is also to be regretted, as the faculty of logical and clear literary expression certainly requires more development among architects. The Report comments also on the unsatisfactory state of the case in regard to competitions; many architects having banded themselves together not to compete except where a professional assessor is employed, while a considerable number hold aloof in the apparent hope of thereby finding easier running in competitions not guarded by an assessor. The want of *esprit de corps* in such a mode of acting is anything but creditable; and we hope those who pursue these tactics will have their reward in being made ducks and drakes of by irresponsible competition committees. In regard to those who support the principle of an assessor, however, it must be remembered that it is a matter of proper loyalty to abide by the decision of the assessor. Some gentlemen seem always desirous to call it in question, whenever it goes against them. They should remember that in all games it is considered very bad form to question the decision of the umpire.

PUBLIC opinion has seldom had a more marked effect than in the case of the Railway Rates and Charges Bills. It is very doubtful whether Mr. Chamberlain would have promised to use his influence against the measures had it not been for the energetic action of the various Trade Associations, and the consequent flood of petitions against the Bills which poured in from all quarters; in fact, it is very probable that, at the outset, the Railway Companies reckoned upon the hon. gentleman's support. The statement made by Sir Joseph Pease on Friday in last week proves

that the Companies are at length convinced that it is useless for them to persist in a second reading. Sir Joseph said, that, as far as his Company (the North-Eastern) were concerned,—and he understood that the other Companies adopted the same views,—the matter would either be allowed to rest or an application would be made to the House for leave to formally move the discharge of the order. It is to be hoped that the latter course will be taken, as such an application would be accompanied by some explanation of the attitude of the Companies in the matter, and this would be very acceptable. It is a singular fact that the most practical outcome of the affair should be the thorough ventilation of a point not dealt with in the Bills at all, viz., the Preference Rates question. This, as we have before mentioned, will certainly not be allowed to drop, and a Government measure dealing with the subject may be confidently expected.

SIR SPENCER WELLS made a very powerful appeal in his lecture last week on behalf of cremation, mainly on practical, in part also on sentimental grounds. "What," he asked, "might St. Paul's and Westminster Abbey be if, instead of the coffins with their corrupting contents, occupying large space, and a source of danger to the living, we had the ashes only admitted, arranged in the urns along the sides of the cloisters or in chapels or crypt, or beneath memorial windows, slabs, or brasses? We should have the same change in graveyards and cemeteries, from danger and disgust to health and beauty, when the overcrowded cemeteries of to-day were converted into the God's Acre of the future." But surely we might go a step further and say, if it is false sentiment to keep the remains of the dead for slow decay, is it not equally so to keep in an urn the ashes remaining from their combustion? What can be the satisfaction in the possession of such relics? Sentiment is really best left out of the question. We are unable to understand the enthusiasm displayed by the advocates of this or that new system of disposing of the remains of the dead. To hear some of them talk, one would suppose they had discovered the elixir of life instead of a new form of treating the dead. The subject is a painful and unattractive one, take it as we will, and is best regarded from the practical or sanitary point of view. In this respect there is no doubt that with all who understand the circumstances the coffin system must be condemned, though it will probably take a long time to eradicate it unless Government see their way to special legislation on the subject. Whether Mr. Seymour Haden's "earth-to-earth" system, which we have always been disposed to favour, may not be extensively used without danger, is a point which has not yet received sufficient practical consideration. Our matured impression is that on sanitary grounds cremation is the best method; but we can quite understand the feeling against it on the part of many, not so much in regard to their own remains as to those of others, as Sir Joseph Fayrer frankly expressed it in the discussion that followed the lecture.

THE case of Mellis and Pym *v.* The Shirley Local Board of Health, which was recently decided by Mr. Justice Cave, will probably find its way to to a higher tribunal. It decided two important points which may here be shortly noticed. The first was that, where one Local Board makes a contract not under seal and a subsequently elected Board ratifies it with the seal of the Board, it is then a binding contract, even though a subsequent Board endeavours to set it aside. Of course it is imprudent of any person who contracts with a Local Board not to take care that the contract is under seal. The several cases, especially Hunt *v.* The Wimbledon Local Board, on which we have more than once commented, should have made this a matter of public knowledge. It is quite right, however, that a ratification under seal should be binding, otherwise even original contracts under seal might be set aside by subsequently elected Local Boards, for there is no doubt that a *bonâ-fide* ratification is as binding as a valid contract in the first instance. The second point in the case may or may not have been rightly decided; looking to the words of section 193 of the Public Health Act, 1875, we are, if we may say so, in accord with Mr. Justice Cave. The contract for plans for a scheme of drainage for the Local Board was made with two persons, one of whom was the surveyor of the Board. It was contended on behalf of the latter that the contract was therefore void. But the judge held that this was not the result of the section which, in so many words, fixed the penalty for an infringement of it. That penalty is the payment of a sum of 50*l.*, and incapacity in future for holding any office or employment under the Act. There can be no doubt, we think, that Pym, the surveyor in this case, had incurred these penalties, but it is so obviously contrary to the public interest that any surveyor to a local Board should enter into a contract to do work for it, that we should like to see any such contract made void by the Legislature. In some cases it might be worth while to incur the above penalties, and make a large sum directly and indirectly out of a contract with a Board, and the public will not be fully secure against the mischief till the operation of the above section is enlarged, if the law as laid down by Mr. Justice Cave is correct.

THE reading a second time, without a division, of the London Street Tramways Extension Bill marks the advance made in public opinion with reference to this method of communication. It is probable that no modern invention has met with more opposition than the tramway. The first American tramway was the New York and Haarlem line; a section of which was laid through the main thoroughfares in 1832, but which proved unpopular, and was for a time suppressed. The lines laid down in the Bayswater-road, in Kennington, and in Westminster in 1861, by Mr. Train, were also pulled up. Yet in spite of the opposition of Mr. Gregory and Sir H. Selwin-Ibbetson, the decision of the Committee which rejected the Bill last year has been overruled; and the arguments that "tramways are a great benefit to the public," and that they are "of special advantage to the working-classes as enabling them to get where there is pure air and cheap dwellings," were tacitly accepted. The movement of urban and suburban building can hardly fail to be affected by this change in public opinion. Being purely home industries, tramways pay, and this is so exceptional a case, with regard to investments in business, that the customers and the tramway-makers pull comfortably together.

THE authorities have at length recognised the necessity, which we have frequently pointed out, of some immediate communication at the Law Courts between the great hall and the northern corridor on the court floor, which is the most important space among the courts, forming as it does a kind of centre of communication. A small staircase is now being constructed on the west side of the passage into the great hall from the north up to a point by the side of the gallery, which overlooks the hall. It will soon be possible, therefore, to gain a comparatively direct route from the hall to the courts without wending a devious way through the crypt, among lavatories and refreshment-bars. It is to be regretted, however, that the authorities have not adopted a bolder remedy, by making a staircase from the gallery overlooking the central hall. This is quite useless as it is at present; whereas if it had formed the landing to a flight of stairs it would at once have been made of practical use, and a fitting approach would have been made to the courts. We can scarcely regard the new side staircase as other than a temporary remedy, for it is most unfitting that the chief avenue of approach to the principal courts from the central hall should be by a winding staircase, which more resembles the servants' staircase in a large mansion than anything else.

THE determination of the Decoration Committee of St. Paul's to abandon the project of decorating the dome *sine die* is not one that causes us either surprise or regret. Some very fine work was, undoubtedly, done by Mr. Poynter for the purpose, but the experimental exhibition of the cartoons only proved that such painting was thrown away in that position, and none of the various schemes, as general schemes of decoration, recommended themselves as ideal methods of treating a domical surface in a decorative manner. In commencing anew on the choir, which is understood to be now the intention, the committee and their artistic coadjutors will have a better chance of feeling their way towards the realisation of a suitable style and scheme of decoration for further development, as they proceed to the larger spaces and more difficult problems presented by the crossing.

THE Exhibition of the Society of Painters in Water-Colours is a remarkably good one, most of the leading members being very well represented, and some, who have been rather defaulters of late, have re-appeared in force. Among these is Mr. Boyce, whose delicately-finished paintings of old buildings in the midst of equally delicate and truthful landscape are a delight to the eye, "Brougham Castle" (103) being, perhaps, the finest. The exhibition contains an unusual number of architectural subjects; Roman studies by Mr. H. Rivière, Mr. A. Glennie, and Mr. Collingwood Smith; "Calais" (48), by Mr. S. J. Hodson; "A Suppressed Monastery" (95), by Mr. Goodwin; Venetian studies, by Mr. Callow, mannered certainly, but in a very effective manner; "The Gate of Justice, Jerusalem" (161), by Mr. Carl Haag; "Amalfi" (98), by Mr. Naftel; and "Flagstaff, St. Mark's" (70), by Miss C. Montalba, are among these. The recent member, Miss Forster, now Mrs. Mary Forster Lofthouse, shows still further powers in her two views of "Pembroke Castle" (234 and 244). Mrs. Allingham is at her very best (which is saying much) in "A Basket of Clothes" (17) and "Lessons" (181); the girl pupil in the latter drawing is a lovely child; the whole scene, an interior, is perfect in its way. The landscapes by Mr. Eyre Walker are notable for power and breadth of style. Among other specially fine things are Mr. W. Field's "Hampstead Heath" (59), Mr. Powell's "The Opalescent Sea" (254), Mr. Goodwin's "Abingdon" (97), and Mr. F. Waterlow's "Village by the Sea" (180), than which nothing more full of bright clear atmosphere could well be seen. The exhibition is a little more restricted than usual numerically; the screens are filled on one side only, but the quality of the exhibition generally is very high.

WE fear the same cannot be said of the much larger exhibition,—larger both as to numbers and as to the average size of the drawings, in the rooms of the Institute. The strongest member, Mr. Linton, contributes only two figures, "Waverley" and "Rose Bradwardine" (444, 464), not in his best way; the strongest landscape artist, Mr. Collier, has a fine work, "Near Burley" (734), in his usual broad and powerful style. But there is a lamentably large array of uninteresting and even coarse work, the coarseness of quality arising in some instances from painting up to the size of the rooms. Of Mr. Fulleylove's various contributions, "The Great Avenue, Hampton Court" (1,066), is the finest; but there is nothing equal to his splendid Versailles pictures of last year. The most important work, and a very clever one, is Mr. C. Green's large drawing of "Nellie and her Grandfather at the Races" (627), a scene crowded with figures, forming a remarkable study, not only of character, but of the costume and manner of a bygone period. The two principal figures form a very fine realisation of Dickens's most pathetic creation. Two humorous pictures, by Mr. Frank Dadd, especially "The Boy,—what will he become?" (412), where a loutish lad is examined by a phrenologist in the presence of his loutish father, are most successful in their way.

Among other prominent works are "How we Caught a Shoal of Pilchards" (192), by Mr. Napier Hemy; "South Harting, Sussex" (306), by Mr. Aumonier; "Hoveringham Ferry" (369), by Mr. Orrock; "The New Dress" (392), by Mr. Small, a figure of a lady, of exquisite grace and refinement; "Cuckmere Haven" (451), by Mr. G. H. Hine; "A Dartmoor Stream" (802), by Mr. Syer; "Sunset, West Coast of Ireland" (823), by Mr. Arthur Severn; "Finale Furioso" (867), a masterpiece of "still life," by Mr. B. W. Spiers; "An Old Song" (294), a large, but carelessly executed work, by Mr. Abbey, who has not done himself justice. We should be curious to know what hunting men think of Mr. R. Caldecott's "The First Flight" (438). His leaping horses do not look as if any of them would get clear over the fence.

AT the dinner of the Institution of Civil Engineers, on Wednesday evening, Lord Sudeley proposed the health of the President, Sir Frederick Bramwell, with such allusions to the great work of the engineering profession as were both true in themselves and suitable to the occasion. The Chairman, however, was hardly content with this, and amplified on the text to the extent of proving that engineering, which employed the sources of powers in nature for the benefit of man, was the most noble pursuit imaginable. In fact, the salvation of our souls seems to be due to it, for without the steam printing-press we could not have had cheap Bibles; the Bible itself being a minor incident of a preparatory nature, apparently, in the chain of events as viewed by Sir F. Bramwell. We certainly think the engineering profession a noble one, but the interests it serves are primarily material ones, and philosophers hold that mental and spiritual interests are even higher than these. We should be glad if we could now and then see on the part of engineers any perception that the universe may possibly be regarded from other than an engineering point of view.

NOTES ON THE ANCIENT CHURCHES OF LONDON.*

ATTENTION has already been called to the extreme attention that has been paid to the orientation of the London churches, for, although four are now built north and south, namely, St. Martin's, Ludgate; St. Edmund the King; St. Peter-le-Poor; and St. Botolph, Aldgate; yet Faithorne's map shows us that this was not the arrangement prior to 1666. This is also the case in the two little ancient Roman churches of Canterbury, St. Martin's and that now known as St. Pancras. It is the case, too, with some few very ancient churches which I have pointed out in Wales. It is worthy of observation that this custom, so remarkably characteristic of our London churches, while it has continued in England for so many centuries, does not appear to owe its origin to Papal Rome. A comparison of a map of Rome with that of London shows the curious fact that, while all our churches were fairly well orientated, notwithstanding all the difficulties of site, yet in Rome itself no attention has been paid to any such arrangement. The great basilicas point in all directions, St. Giovanni Laterano being due west instead of east; Sta. Maria Maggiore, north-west; St. Croce in Gerusalemme south-east; many of the churches north or south, or any other point indifferently, while St. Peter's itself has its main entrance at the east and its choir altar to the west. These arrangements are of early as well as more recent date, and indicate clearly enough that there never was any rule of orientation observed in Rome. The cities of Italy, in like manner, for the most part follow what we find in Rome, but across the Alps orientation begins to show itself, and at Paris and in most of the other cities of France the rule is observed as in England and Wales. These facts are curious and, perhaps, unexpected, for it raises the inquiry,—From what people did the ancient Roman Christians of Britain derive the practice, and how did it come about that the Anglo-Saxons followed the older practice rather than that which was observed in Italy?

The churches which escaped the Great Fire of 1666, included in the area under discussion, were twenty-two in number. These were, doubtless, fairly typical examples of the whole; so far, at least, as one group of churches can resemble another, each building having, in fact, its own characteristics not to be found in another. The resemblance, therefore, of the churches which survived can be but a very general one, and nothing more, to those which perished in the terrible calamity referred to. Of these, no fewer than twelve have been since rebuilt, and two have been demolished, leaving but eight in number of those which survived. These latter have been so frequently described that their bare enumeration here will be sufficient. They are as follow:—Alhallows, Barking; Andrew Undershaft; Ethelburga; Helen; Katherine Cree; Olave, Hart-street; Bartholomew the Great; and St. Giles, Cripplegate.

Our attention to the churches which have been rebuilt since the Fire may be more interesting and profitable than any further consideration of the buildings which still exist, and the more so since so little attention has hitherto been directed to the references to them which have come down to our time from the last century, when their rebuildings took place. These notices are, indeed, more exact and definite than many may be aware of. They consist not only of pictorial illustrations in a very complete form, but there are descriptive references in many old histories and magazines. The pictorial illustrations give us views of every one of the churches which have passed away, alas!—not very exact in several cases, and with the usual differences of proportion to be found in most English topographical prints more or less, one view giving a very different form, let me say, to the windows or doors, a different design to the window tracery, and such like. Still, there is sufficient to show what the general designs were, and a critical eye will speedily detect what appears to be in good proportion, and what is distorted. The views by R. West and W. H. Toms, engraved about 1740 by the latter of these two artists, are by far the best. Then there are separate views of several of the removed buildings in the early volumes of the *Gentleman's Magazine*, as well as some now scarce tracts treating of separate churches. As to the descriptive evidences, it may be of interest to say that there are very ample and complete notices of each of these churches in a valuable little treatise on London generally, and particularly on its churches. This is "The New View of London, or an ample Account of that City," London, 1708,—a work which really should be better known than it appears to be, and which is certainly seldom referred to. It contains brief notices of each of the London churches, of its foundation, design, capacity; of its monuments, services, and in some cases of interesting points of ritual and church furniture.

It may be well to pass these churches rebuilt since the Great Fire briefly in review, and to afford an idea of the scope of the "New View of London," let us extract in detail the notice of one of these buildings, as a sample of the remainder. I have taken the description of Alhallows-on-the-Wall, since it is short, and since I am able to accompany it by one of Toms's views.

St. Alphege was a church of poor design. The old steeple remains, and by the removal of the surrounding buildings it was recently visible. There are also an archway and some fragments of walls remaining.

St. Andrew, Holborn, still preserves its old western tower, heightened by Sir Christopher Wren. There is a plain Perpendicular window in its west front, and a plainer doorway below.

The tower of the rebuilt Church of St. Bartholomew-the-Less still remains, with some good internal arches.

St. Botolph, Aldersgate, is shown in one of Toms's views. The present tasteless building, now the ugliest church in London since St. Martin Outwich has been pulled down, contains no portion of the picturesque but plain country church shown in the view referred to.

St. Botolph, Aldgate, had a good embattled fifteenth-century tower, with some picturesque buildings before it. It is shown by a scarce print in the Crace collection, as well as in that of Mr. Gardner, and in some others.

St. Botolph, Bishopsgate, is well described in the "New View of London."

St. Dunstan's-in-the-West, having been removed only about fifty years ago, there are several engravings extant, showing the old building, with its tower at the north-west corner, its curious clock, &c. There is also a book of views showing the interior, and all the monuments. Being taken down to widen Fleet-street, its foundations do not appear to have been removed, for I saw them a few months ago only just under the modern paving, when some repairs to the road were being effected.

St. Olave, Southwark, is included in this survey, since some of the houses of the parish were on Old London Bridge. I know of no record of the old building, except that in the "New View," but there is a very good view by Toms.

St. Martin Outwich is shown by several old views, as well as by Wilkinson's pamphlet, which contains plans and views. It was a picturesque but plain and irregular building. In its rebuilt form, it had nothing whatever to recommend it, being probably the most miserable design for a church possible to be produced. The demolition of this building revealed the existence of a single Perpendicular window, of good design, on the south side. This remained visible for many months, and was only removed on the erection of the secular buildings on the site. The old monuments are now in St. Helen's Church.

St. Peter-le-Poor is well illustrated by old views and plans. It was not unlike, in the irregularity of its plan and design, the preceding church.

Holy Trinity, Minories, was always a small plain church, now rebuilt in a poor, tasteless manner.

Of the two churches which escaped the Fire, but since removed, it will suffice to say that St. James's, Duke's-place, was a very plain building, of brick, with four wooden pillars internally; and of Allhallows, Staining, the curious tower still survives, thanks to the care of the Cloth-workers' Company.

Old London, prior to the Great Fire, must have had a picturesque aspect, with its forest of towers and spires, not clustering around the massive central tower of the cathedral, but following the indications already recited, thickest to the east of the cathedral, right and left, so to speak, of the northern end of Old London Bridge. Old views of London,—Hollar's and one or two others,—afford some indications of the designs of these perished churches. Thus we know that St. Mary-le-Bow had a steeple of open arches something like the present steeple of St. Dunstan's-in-the-East. That St. Laurence Pountney had a lofty wooden spire, and such like. An inquiry has, however, never yet been made as to whether or not any fragments of the buildings which have passed away still remain to our time.

This inquiry I now propose to begin, and with it to conclude this paper. I cannot say that it can be considered at all as a complete one, yet since there is no other extant known to me, it will have the merit, at least, of some originality. Here let me indulge in the lament that the principles of church reparation which many of us are striving to enunciate,—that is, to preserve as much as possible of every old church requiring repair, and to destroy nothing,—was unknown to the builders who set to work after the Great Fire; would that it were thoroughly known even to the men of our own day. Were this so, we should not have to lament the loss of several interesting works and the mutilation of others at the present time.

The builders after 1666 found several of the ancient churches with their towers and walls standing. Their rubble facings did not accord with the well-wrought Portland stone then considered to be the correct style of building, and either a clean sweep was made, or the old walls were cased, in every instance the whole of the old materials being re-used as backing to the new walls, and hardly any attempt was made to preserve the monuments. We can show that this was as stated by the recent results of the demolition of some of these churches, which will be recorded further on.

There are remains of ancient work in the following churches, or there were so until the recent period of the removal of the buildings:—

St. Stephen's, Coleman-street. There is a plain western tower, the walls of which are for a great portion those of the old building. The old masonry is visible on the north side. Above, the wall has been faced with Portland stone.

St. Vedast, *alias* Foster. On the south side

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* A paper by Mr. E. P. Loftus Brock, F.S.A., read before the St. Paul's Ecclesiological Society, in the Chapter House of St. Paul's, April 15th, 1885. See p. 580, *ante*.

there are bases, and a good portion of two or three of the buttresses still remaining, as well as the connecting portions of the south wall. There are bold fifteenth-century plinth mouldings carried along and mitred around the buttresses, while the wall is original to a fairly good height, some of it without any casing. The old steeple remained after the fire until 1694, when it had to be rebuilt. St. Vedast was Bishop of Arras at the end of the sixth century. His death is recorded as having taken place A.D. 399. There is no sufficient recorded reason for the "*alias* Foster" after the name of this church, but in the register of Canterbury already referred to the name Amand occurs.

St. Nicholas, Cole Abbey. The whole of the south wall of this church is original. Before the formation of the Metropolitan Railway it was very distinct, being formed of squared Reigate stone, and having the remains of a moulded string course high up just below the parapet. The portion exposed has, since the formation of the railway, been cased with modern ashlar with false windows. There were no signs of any windows along its whole extent, showing that old buildings had come close up to it.

St. Stephen's, Walbrook. The south wall of this church is very similar, with the peculiarity that at the south-east end there were remains of a domestic building, one of the windows of which had its iron saddle bars remaining. More to the west were remains of another cross wall with a fifteenth-century doorway. To the east of the east end, going east and west, there is a wall of finely-squared masonry, going down to a great depth, entirely buried beneath the accumulated earth.

St. Mary Aldermary. The great bulk of the side walls of this fine church are ancient, as well as nearly the whole of the finer tower. This tower was finished in 1629, having been founded 120 years before by Sir Henry Keble. Robert Pierson gave 200 marks on condition that it should be built to follow the ancient pattern. The cost was 1,000*l*. We are told by Newcourt that this "steeple, notwithstanding the church was burnt in the late dreadful fire, is still standing firm and good." Indeed, it may safely be said that the side walls and tower as we now see them are practically the same as before the Fire. The tracery of the windows was renewed after that event, and doubtless altered more or less, but the openings are almost entirely original. At the recent "restoration" of the church the ancient nature of the walling was very apparent. The walls of the vestry on the north side were also original, as well as its window, then laid open for the first time, perhaps, since the Fire, but all has now been scraped, and the marks of the original surface obliterated. The tower, being a new one, was therefore in sound condition to resist the Great Fire.

St. Alban's, Wood-street, is another church which is almost the same as before the Great Fire. Its walls are, for the most part, original; the tracery even of one or two of the windows is also original, notably the north window of the tower at the ground level, where even the old saddle and stancheon-bars remain. It is expressly stated in the continuation of "Stow's History" that the walls were merely repaired. Would that we could still see in this church of most ancient foundation some of the curious capitals and Roman brick which Stow himself speaks of. The rebuilding, however, which he mentioned as being about to take place, did happen, and the remains of the church anterior to the Great Fire referred to are of that structure, erected in the seventeenth century. Here was another new church to meet the ravages of the Fire.

St. Mary-at-Hill possessed a large quantity of ancient work until a comparatively recent period. There were many old buttresses and some fairly good Perpendicular windows, but these have fallen, so far as outside observation goes, before the hand of recent builders.

St. Dunstan's-in-the-East preserved almost the whole of the ancient side walls until the rebuilding in 1816. There is a view in Smith's "Antiquities of London" showing a portion of these, and, notably, a window with geometrical tracery of about 1260. The present east window is said to have been copied from an ancient one.

St. Christopher-le-Stock was almost entirely the ancient church repaired only after the fire. Old views show it with a Gothic tower with pinnacles, with poor inserted windows. It was removed to enlarge the Bank of England.

St. Bartholomew by the Exchange had a curious octagonal turret on the north side, rising above the height of the north aisle. This, and a large mass of the walling, was original work. This church was removed about forty years ago.

The south wall of St. Benet, Gracechurch, was that of the original church. It existed until quite recently, after the removal of the church a few years ago. Indeed, a portion of it may still be seen doing duty as a party-wall between the block of shops erected on its site, and the shop to the south now in course of erection.

The east wall of St. Magnus, London Bridge, is original, and it used to extend above the height of the present north aisle, where the old masonry was visible, but it was cemented over a few years ago. The tablet to Myles Coverdale is upon a portion of this wall.

When St. Michael's, Queenhithe, was removed a few years ago, it was found that the whole of the bases of the walls were original; a part of the old wall, indeed, was always visible on the north side. The mode adopted by the Mediæval builders to raise their fabrics through the accumulated earth of centuries to the then level was very apparent. The foundations had been carried down to the solid earth, and this necessitated the building of thick solid walls up to the level required. These, for the most part, remain, having been utilised for the new clergy-house, &c., erected on the site.

The pulling to pieces of the beautiful steeple of St. Antholin's Church, a very characteristic work of Sir Christopher Wren, so ruthlessly and needlessly done a few short years ago, made it apparent that the great bulk of the walling had been formed of the former church demolished by the fire. There were evidences of fine work,—masses of neatly-wrought freestone, fragments of carving, and the like, the former in great abundance. These were of fifteenth-century date, doubtless fragments of the church rebuilt in the fifteenth century. The destruction of the fine steeple will be a subject of regret for all time, but the evils of disturbing an ancient burial-place were grievously shown in this case. After careful search had been made and every interment removed, as was supposed, five or six shells were hardly sufficient to contain other bones which were found by the excavators when the present shops were erected on the site; most of these bones were blackened by age. It was a wretched sight!

The foundations of St. Benet Fink, under the modern paving, are almost entirely those of the old church. They are just to the west of Peabody's statue.

There is an interesting paper by Mr. J. E. Price, F.S.A., in a recent volume of the *Journal* of the London and Middlesex Society, on the discovery of a large portion of the south aisle of the nave of Christchurch, Newgate-street. This was burned in 1666, and never rebuilt, the present church being on the choir of the old one. Mr. Price has also read a paper on the results of the excavations on the site of St. Dionis Backchurch, subsequently to the removal of that building. The little crypt discovered by Mr. Street, R.A., many years ago, was hermetically sealed at the closing of the graveyards, but doubtless reopened at the demolition. Mr. Price's paper is not yet published.

The old foundations of St. John the Evangelist, Friday-street, were recently cut through by the underground railway extension. Some old fragments of monumental work were found some years ago in making a sewer close to the site of St. John's, Zachary, and were deposited in the churchyard, but they are not now visible.

St. Laurence Pountney. A large mass of the walling of the north side of this church still remains incorporated in the houses forming the south side of the churchyard.

St. Leonard, Eastcheap. The site of this church was completely excavated a few months ago, and it now hangs in air, the level of the railway being many feet below it. Only a small piece of the old burial ground remains. The foundations showed a long chancel and a nave, the latter having masonry of great antiquity on its north side, made up with fragments of Roman brickwork.

St. Martin, Ludgate. Much of the old masonry of this church is incorporated in the buildings to the east of it.

St. Martin Orgars. The old tower of this church remained until about 1850, when it was removed to make way for the present rectory-house. It was a plain low structure of fifteenth-century date, having angle buttresses and poor detail. It was built of chalk walling, and the marks of the Great Fire were very visible on its demolition, which I witnessed.

The fine old Norman crypt below St. Mary-le-Bow, the oldest piece of Norman work in any church in the city, needs only passing reference here, for the completeness of this list.

The old east wall of St. Mary Mounthaw formed the wall of the burial-ground in Labour-in-Vain Hill, until the whole neighbourhood was remodelled.

St. Mary Woolnoth was one of the churches like St. Christopher-le-Stock, which were only repaired after the Great Fire. It was removed to make way for the present building. The "New View of London" gives fair details.

A small crypt belonging to St. Mary Magdalen, Monument-yard, was found a few months ago, and reported at the time in the newspapers. It was covered over, unfortunately, before I could see it.

St. Matthew, Friday-street, just demolished, was a brick building. There was much evidence that its ancient predecessor was also of brick. The removal showed a large mass of wrought stone belonging to the fifteenth century windows.

St. Michael, Cornhill, preserved its ancient steeple for a long period after the rebuilding of the church. Not being strong enough, however, for the fine peal of bells, having been weakened by the fire of 1666, it was rebuilt by Sir C. Wren as we now see it. The design is preserved in some old engravings.

On the removal of Gerard's Hall crypt, it was apparent that the south wall of St. Mildred's, Bread-street, was that of the ancient building. There was a private door of approach, now walled up, which probably still remains.

St. Peter, Paul's-wharf. A mass of the ancient walling of this church was to be seen recently on the north side of the little burial-ground which forms its site in Thames-street.

The concluding church to refer to is that of St. Sepulchre, which preserves its ancient tower, its pretty south-western porch and the parvise over, as well as the mass of old walling of the north and south aisles. The design of the old windows has recently been brought back to the church, by the removal of the plain, large, semicircular openings, introduced in the middle of the last century. The church presents again much the same aspect that is shown in engravings of the period, one of which I exhibit.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ANNUAL REPORT OF THE COUNCIL.

THE annual report of the Council of the Institute, to be presented and considered at the fifty-first annual meeting, to be held on Monday next, contains the following passages:—

The Council have much regret in recording the retirement from office of the senior Vice-President, Mr. David Brandon. At the same time Mr. Fraser, of Leeds, Mr. Honeyman, of Glasgow, and Mr. Paley, of Lancaster, have intimated their intention to make way for other non-Metropolitan representatives; and Mr. Blomfield has resigned, with an expression of regret at being obliged to relinquish the duties of his post.

The number of members in 1884 compared with that of the two previous years is here stated:—

	1882.		1883.		1884.	
Fellows	402	1196	408	1205	412	1209
Associates	682		685		684	
Hon. Associates	112		112		113	
Hon. Fellows	15	74	15	72	15	67
Hon. Members and Hon. Corr. Members	59		57		53	
	1270		1272		1276	

The losses by death have been considerable, namely:—William Pettit Griffith, Matthew Ellison Hadfield (Sheffield), John Middleton (Cheltenham), Edwin Nash, Richard Makilwaine Phipson (Norwich), John Holloway Sanders (Derby), William Thompson, and John Whichcord, Past President, among the Fellows; Alfred Bevan, Henry Blackwell, Frank Johnson (Bodmin), Charles Marriner, William Pace, and Herbert E. Tijou (Manchester), among the Associates; Charles Henman (formerly a Fellow), Henry Andrewes Palmer, and Sir Erasmus Wilson, among the Hon. Associates.

One foreign Member, Professor Lepsius, of Berlin, who received the Royal Gold Medal in 1869, is also deceased and at a very advanced age.

A comparison of the income derived from subscriptions (exclusive of arrears) shows 3,145*l.* 16s. in 1884 as against 3,069*l.* 1s. in the previous year, and 3,059*l.* 12s. in 1882. A similar comparison between the ordinary disbursements and receipts for the three years shows:—

	1882.	1883.	1884.
Ordinary annual income	£3,423	... £3,737	... £3,756
Ordinary annual expenditure	3,010	... 3,299	... 3,554

[The estimate of income and expenditure for the current year, 1885, exclusive of all trust funds, entrance fees, arrears of subscriptions, special receipts and disbursements, shows a total of 3,735*l.* on the side of income, and of 3,515*l.* on account of disbursements, leaving a balance of 220*l.*]

Special disbursements will be required, during the year, in connexion with the Charter and the new Library Catalogue, and also for the purchase of the furniture in the Arbitration Room.

An Examination in Architecture was held at Manchester, during the week commencing the 23rd of February, 1885, under the auspices of the Manchester Society, assisted by the Chairman of the London Board of Examiners, Mr. Arthur Cates, who at the request of the Council attended at Manchester. Five candidates presented themselves and passed, namely:—

Benson, George, 10, Gray-street, York.
Ogden, Paul, Corporation Chambers, Corporation-street, Manchester.
Spencer, Norman, The Knoll, Fulshaw Park, Wilmslow, Cheshire.
Willink, William Edward, M.A. Cantab., Dingle Bank, Liverpool.
Wood, Edgar, Suffield-street, Middleton, Manchester.

An Examination in Architecture was held in London, during the week commencing the 23rd of March, 1885, when nineteen candidates presented themselves, twelve of whom passed, namely:—

Berney, Henry, 61, North End, Croydon.
Cox, Alfred Arthur, 16, St. George's-terrace, Queen's-gate, S.W.
Eaglesham, John, Town Chambers, Ayr, N.B.
Ellison, Archibald Taylor, 4, Queen Victoria-street, E.C.
England, Robert William, Christchurch, New Zealand.
Farrow, Frederic Richard, 32, Craven-street, Strand, W.C.
Minty, James Andrew, 5, Lanhill-road, Paddington, W.
Nisbett Norman Clayton Hadlow, 7, Euston-square, N.W.
Pick, Samuel Perkins, 38, Guthlaxton-street, Leicester.
Watt, John, 14, Colby-road, Upper Norwood, S.E.
Yates, Thomas Charles, 24, John-street, Bedford-row, W.C.
Young, George Penrose Kennedy, 34, Marshall-place, Perth, N.B.

Of the twenty-four gentlemen who thus presented themselves for examination at Manchester and London seventeen have received notice that they are qualified to become candidates for the Associateship;* four have been relegated to their studies for one year, and two for two years, with permission to present themselves again for examination after the prescribed period without further payment and without submitting probationary work. The Council have also to report that, in the opinion of the Board of Examiners, the merits of the candidates generally were not such as to warrant the presentation of the Ashpitel Prize, which has not been awarded for two years. The Council trust that the work of future candidates will be of a character sufficiently good to prevent a recurrence of these results.

The recommendation of the Institute that the Royal Gold Medal for the current year be awarded to Henry Schliemann, F.S.A., Hon. Corresponding Member (Athens), D.C.L., Hon. Fellow of Queen's College, Oxford, has received the gracious approval of the Queen, who has notified, through Sir F. H. Ponsonby, that Dr. Schliemann's services are well known to her Majesty. . . . .

Among the donations to the library, the Council desire to make special mention of the present of a coloured copy of the great work† collated, under the auspices of Napoleon, by the Institut de France, as a memorial of the expedition to Egypt at the end of the last century. For this the Institute is indebted to Mr. James Fergusson, who describes the work as the most magnificent of its class ever produced, and one without which no architectural library, like that of the Institute, can be considered complete.

Proofs of regard and interest from foreign Governments, from members of the architectural profession in various parts of Europe and America, continue to be received, and donations of works to the library from these sources have been numerous and gratifying. . . .

The Council have to express their regret that only one essay was submitted for the Institute Medal (with ten guineas), and that it was not of sufficient merit to warrant their recommending it for the prize. The same subject, "Pediments and Gables," has been set for next year, and in accordance with the general wish, expressed at the special meeting for the award of medals and prizes held last March, the sum of 25 instead of 10 guineas is offered as a premium to accompany the Institute medal for essays in 1885–86. They have further to report that neither in this nor in the preceding year have any designs been received in competition for the Grissell Gold Medal for construction, and they are compelled to believe that the principal reason for this marked abstention is the unwillingness or inability of architect-students to touch the important subject of iron construction,—a subject which was set in 1883, repeated in 1884, and is again set for the current year, with the addition of a premium of ten guineas to be given with the medal.

The list of medals, studentships, and other prizes for the current year is one of increased and unusual importance. The foundation of a new studentship, to be held, under conditions, for two years, for the study of architecture, more especially in regard to ornament and coloured decoration, and the present of a special studentship, to be held in 1886, for the encouragement of the study of Classic architecture and of Classical Renaissance architecture in the kingdom of Italy, are welcome additions to the rewards in the gift of the Institute, for which the Council desire to record their warm thanks. With reference to the former, styled the Owen Jones Travelling Studentship, it will probably be remembered that the late Mr. Whichcord, at the opening meeting of the session 1880-81, stated, after the delivery of his presidential address, that it was the generous intention of the two sisters of the late Owen Jones to bequeath to the Institute a sum sufficient to endow a studentship in remembrance of their brother. Since then one of these ladies has died, and Miss Hannah Jane Jones, in pursuance of her deceased sister's most earnest desire, has transferred the sum of 1,250*l.* Midland Railway 4 per cent. stock to the Institute, for the purposes of the studentship. With respect to the special studentship of 50*l.* for the encouragement of study in Italy, the Council have only to add that it is the generous gift of an architect, although not a member of the Institute, namely, Mr. Thomas W. Aldwinckle, of London.

At the General Conference of Architects, held in May last, the following Papers, which form part of the volume of Transactions, 1883-84, were read and discussed, viz.:—The duties, obligations, and mutual relations of architect, client, and contractor, with reference to English and foreign practice, by Arthur Cates, Member of Council; the Tenure of Land for Building Purposes, by Thomas Blashill, Fellow; the late George Edmund Street, R.A., President, by the Rt. Hon. A. J. B. Beresford Hope, M.P., Past-President; the late William Burges, A.R.A., Fellow, by George Aitchison, A.R.A., Member of Council; the late Eugène Emmanuel Viollet-le-Duc, as Architect and Art-historian, by Mr. Charles Wethered; the French *Diplôme d'Architecte* and the German System of Architectural Education, by R. Phené Spiers, F.S.A., Fellow; English Architecture Thirty Years Hence, by Professor Kerr, Fellow. A full report of the work of the conference appeared in the *Builder*, and an official record of it is preserved in the Journal of Proceedings, 1833-84, p. 161. An account of the same,* communicated by Charles Lucas, Hon. Corr. Member to the Société Centrale des Architectes, Paris, at a Conference of French Architects held in July of last year, is also published by that Society, with a commentary note by M. Paul Wallon, the Secretary and Director of the Paris Conference.

The Special Conference on the sanitary construction of houses, which was held under the auspices of the Institute during three days in July last, at the International Health Exhibition, elicited some interesting discussions. A full report of the work of that Conference has been published by the Executive Council of the Health Exhibition and the Council of the Society of Arts, and it forms part of volume ii. of the "Health Exhibition Literature." An official record of it is also preserved in the Journal of Proceedings 1883–84, page 177 . . . . .

The Council have pleasure in stating that the Competitions Committee have made considerable progress in the work that lies before them. In the course of the year a circular-letter, setting forth the objects and aims of the architects who have signed the undertaking, has been sent to all the mayors and other public functionaries throughout the United Kingdom, as far as their names and addresses could be procured; and a letter, with the same intention, has been addressed to the editors of the leading metropolitan journals. The reason for this step was to acquaint those addressed, and the public generally, with the views of the large number of architects who had signed the undertaking; that they will not take part in any public architectural competition, unless an architect of established reputation is appointed to advise the promoters upon the relative merit of the designs submitted in that competition; and to impress upon promoters the advisability of an assessor being appointed as the initial step. At the present time the number of adhesions from architects exceeds 1,400. From March, 1884, to the present date, the committee have been in correspondence with the promoters of forty-six competitions, and have been mainly instrumental in procuring the appointment of assessors in fourteen cases, over thirty per centum of the entire number applied to, a result which may be considered on the whole satisfactory, considering the short time the scheme has been on foot, and the long time it takes to reform any abuse. The greatest drawback to success lies in the fact that a large number of architects will still compete, no matter what the conditions are, so that promoters can easily procure architects to send in designs, without the condition of an assessor being appointed. Were support given by those who have not yet signed the undertaking reform would be very soon secured. The committee appeal to all those who have the honour of the profession at heart to aid them in their endeavour to procure fairness in the conduct of architectural competitions.

In respect to the Charter, the Council have carefully considered a memorial presented in November by more than 450 Associates, as well as representations received from non-metropolitan members, and, having availed themselves of the services of a solicitor who had large experience in advising on such matters, they are now in a position to consult with the Associates' Memorial Committee and with delegates from non-metropolitan societies. The Council therefore hope to be able shortly to lay the result of their inquiries before a special general meeting of the Institute, for the consideration of the general body of members.

The Professional Practice Committee have held four meetings, at which subjects of much importance have been considered and dealt with.

An application to be admitted into the class of Fellows, which was received from an officer of the Royal Engineers, has been carefully considered by the Council, but it was found that no power existed under the Charter to admit as professional members such military officers, who, so long as they remain in the service, and whatever their particular employment may be, are eligible only for admission to the class of Honorary Associates.

The resignation of some non-metropolitan members having occurred at the close of 1884, on the sole plea that they are resident at too great a distance from London to attend the Institute meetings, the Council venture to urge that the corporate body of British Architects exists for a higher purpose than that of a general meeting, or for the maintenance even of a library. It exists for the advancement of architecture as a profession, as well as an art and a science, and in this country where the State remains neutral, academies, institutes, and such learned societies, depend entirely upon the support and co-operation of individuals, a matter, the Council think, of as much importance to architects throughout the country as to those of London.

* Fifteen of these qualified candidates were nominated as Associates at the meeting of the Institute held on the 20th ult.

† The Description de l'Égypte, consisting of ten volumes of text and thirteen volumes of plates, and dealing not only with the antiquities of Egypt, but also its natural history, botany and geology, and other subjects.

* La septième Conférence générale des Architectes britanniques (Londres, 5–9 Mai, 1884):—Notes de Voyage et Extraits divers. See Conférences faites au siège de la Société Centrale des Architectes, 1884, pp. 59–81. See also the *Bulletin Mensuel*, No. 2, Feb., 1885, pp. 71–79, of the Société Centrale des Architectes, Paris, for an analytical report upon the two last volumes of the Transactions, 1882–83 and 1883–84, by Charles Lucas, Hon. Corr. Member.

ON RENDERING WOOD FOR BUILDING PURPOSES NON-INFLAMMABLE.*

TOMLINSON says that out of forty salts tried, four only were applicable to light fabrics, viz., phosphate of ammonia, chloride of ammonium (sal ammoniac), sulphate of ammonia, and tungstate of soda. The sulphate of ammonia is the cheapest salt, but causes brown spots on the muslin when ironed, and dissolves in water, so that it has to be renewed after every washing; tungstate of soda is, therefore, usually adopted. The oxides of tin withstand both water and soap, but render fabrics yellow: consequently their use is restricted to canvas, sails, and other coarse materials, but this would not affect their use with wood. This is also the case with borate and phosphate of protoxide of tin and arseniate of tin. These last are some of the attempts which have beeu made to fix some of the non-soluble compounds in textile fabrics.

The method of rendering sail-cloth permanently non-inflammable is to soak the canvas for two days in a protochloride of tin solution of the strength of two parts of the salt to one of water, and to leave it for a day in a concentrated solution of stannate of soda or carbonate of soda. The canvas is dried, and is then ready for use. So much for fabrics. Many of the objections to which the above solutions are liable would not affect their use for wood, and they may be well added to our list to help us to the selection of the most suitable one hereafter. The English Cyclopædia says "many methods have been devised for making wood more or less fireproof. The substance which is most attracting notice now is silicate of soda." Mr. Abel, chemist to the War Department, England, and Mr. Hay, chemist to the English Admiralty, made experiments with this salt in 1857 on a wooden hut, painted three times inside and out with a solution of silicate of soda; but, unfortunately for the fairness of the experiment, the building (erected to try other experiments with) was constructed with a double boarding, so that it was only possible to coat or impregnate each plank on one side, but the value of the silicate was established beyond a doubt. A flame from a large heap of shavings played against the building for some minutes, but only succeeded in catching the end of one plank, and even that did not blaze, but only smouldered a short time. By the heat of the fire the salt was drawn to the surface of the wood, and formed a glaze upon it. Subsequently, when the whole hut was destroyed by fire, although the fierceness of the flame was such that few materials could have withstood it, yet several planks remained of the exterior coated portion. Upon examining the planks, the unprotected surfaces were found to be charred, but the charring only extended to those parts which had not been touched by the silicate. Asbestos paint has been used with nearly similar results. So far as experiment has gone, silicate of soda appears the most convenient and effective known for the purpose. Spon's "Workshop Receipts" says, respecting silicate of soda:—Deal boards become almost incombustible when painted with a diluted solution of silicate of soda, called also glass water. The glass water is generally sold as a thick fluid like honey. This may be thinned out with water six or seven times its own bulk, the water must be soft, or boiled water will do, and apply the solution warm. In about twenty-four hours apply a second coat, and perhaps a third; use a new brush, and wash the brush clean after using, or it will become soft. Avoid grease or fat on the boards before painting them." In the same book is another receipt, as follows. The timber to be soaked four or five days in a solution of 1 lb. of alum and 1 lb. sulphate of copper to 100 gallons of water, in a tank sufficiently large to allow of the timber being kept immersed. The wood to be allowed to thoroughly dry before using. This would be a good plan to adopt with the large upright timbers after having injected them whilst green by the Boucherising process. Though owing to the blue tinge given by sulphate of copper that salt could hardly be suitable for interiors where the lighter woodwork was plain, yet chloride of zinc might be used for every part of the wood in a house, injecting it while the wood is green, as it acts chemically on the sap and is white. Sir W. Burnett says, "Salt water only increases its efficacy. It is perfectly innocuous, and cannot endanger health. All the timbers and ceilings of a ship may be impregnated with the solution without the slightest prejudicial effect on the crowded inmates. It prevents the oxidisation of metals, as has been proved repeatedly on copper and iron bolts with the most satisfactory results, and articles prepared with this solution resist combustion in proportion to the strength of the solution." By Maughan's process dry wood is saturated with an aqueous solution of phosphate of soda and muriate or sulphate of ammonia; a decomposition ensues, followed by an evolution of ammoniacal vapour, and the formation of an incombustible coating on the surface of the wood. Jackson's patent consists in the application of salts of zinc and ammonia. Mr. Payne's process of rendering wood fireproof is by pressing a solution of sulphuret of calcium or barium into the wood in a confined tank and allowing it to remain at a pressure of 110 lb. to 140 lb. per square inch for an hour, then drawing off the solution and treating the wood in a similar manner with an acid, or a solution of some substance such as sulphate of iron, which will unite with the barium or calcium and set the sulphur free. When the wood is to be impregnated with a large amount of solid matter it should be dried between the application of the two fluids. By this means an insoluble sulphate of lime or sulphate of barium is formed in the body of the wood, which is thus rendered nearly as hard as stone. Wood so prepared is now largely employed on English public works and railways. The most porous, the softest, and, of course, the cheapest woods, are rendered equal in point of usefulness, durability, and strength to the hardest and best descriptions of timber, and are susceptible of a high polish.

Professor Fuchs invented a solution of ten parts of potassa or soda, fifteen parts of fine silicious earth, with one part of charcoal mixed with water. This composition applied to the surface of the wood forms a vitreous coat which effectually resists the action of fire. Decisive experiments have fully established the efficacy of this plan, and the Royal Theatre of Munich was protected by the application of it. The surface covered was upwards of 400,000 square feet, at an expense of 200*l.*, or 100 square feet for 1s.

A somewhat similar English composition consists of one part by measure of fine sand, two parts of wood ashes, and three parts of slaked lime, ground together with oil and laid on with a painter's brush, the first coat thin and the second thick. This forms a strong adhesive compound, both fire and water proof.

Saloman's patent consists in an application of two solutions to the surface of the wood. The first consisting of sulphate of alumina, glue, and water, the second of chloride of calcium, glue, and water.

In Spon's "Workshop Receipts" a wash composed of lime, salt, and fine sand or wood ashes, is recommended to be put on in the ordinary way of whitewash; it renders a shingle roof fifty-fold more safe from fire from falling cinders in case of fire in the vicinity. It has also a preserving effect against the weather, and the older and more weatherbeaten the shingles, the more benefit derived. Such shingles are generally more or less warped and cracked, and the application of the wash to the upper surface restores them to their original form, thereby closing the space between the shingles, whilst the lime and sand by filling up the cracks prevent them from warping. By the addition of a little lamp black the wash may be made of the same colour as the old shingles, and thus remove the offensive glare of a whitewashed roof.

Such is the information we are able to glean so far, and before offering any suggestion of our own, let us remember that to season timber in the ordinary way requires seldom less than three years', often six or eight years', exposure to the air freely. Whereas, by the Kyanising (chloride of mercury) process, rendered unfit for our purpose by the suffocating fumes thrown off on exposure to great heat, the Burnettising (chloride of zinc), the Boucherising (sulphate of copper), and the Beerising (borax) systems, the destructive principle (sap) is dried and rendered inert, thus making larch, firs of all kinds, willow, birch, elm, beech, ash, poplar, &c., of considerable value for durable purposes.

We would suggest the following, giving preference to the solutions recommended in the order named:—

For houses already built, apply several washings of silicate of soda, sulphate of copper, or borax, to the fixtures of every description, and let all movable lighter work, roof shingles (when used), mats (as used in Japan), &c., soak several days in the same solution.

Where shingle roofs are used let them be afterwards coated with lime, salt, and fine sand or wood ashes.

Where houses are to be built, impregnate the main or thick timbers thoroughly with chloride of zinc, sulphate of copper or borax, by pressure obtained as in Boucherising, whilst the timber is green, allow it to dry thoroughly before fixing, and paint the outside with silicate of soda three times when in position.

The lighter woodwork, shingles, &c., can be cut from large balks thus impregnated, and afterwards washed superficially with silicate of soda, or this woodwork may be saturated by steeping in silicate of soda, chloride of zinc, or borax, but with a coat of silicate of soda outside all.

By the use of the above comparatively simple and inexpensive remedies all complicated steam-pressure paraphernalia, vacuum pumps, &c., are avoided. The area of fires would be greatly reduced, whilst the insurance companies would be able to take risks which at present they refuse to do, even on stone buildings if the roofs are of shingle. In Jamaica and other parts this is much felt. The general application of these precautions in many towns would permit of a sufficiently large reduction on insurance premiums to, of itself, pay the interest on the initial cost of thus treating the timber used in our dwellings. We say nothing of the daily risks to life and property. In the foregoing paper we have freely borrowed from every authority we could meet with, but the occurrence of fires in timber-bullt towns, destroying areas up to one square mile and a half at one fell swoop, must be our plea.

Messrs. Jessop & Co., of 43, Mincing-lane, have kindly given us the following quotations, subject, of course, to fluctuations of the market and reductions in the price on taking large amounts:—

Borax crystals	£43	0	0	per ton, for large quantities.
,, ,, ground	46	0	0	,,
Alum crystals	6	0	0	,, 2½.
,, ,, ground	6	15	0	,, ,,
Phosphate of soda	55	0	0	,, ,,
Silicate of soda	75	0	0	,, ,,
Phosphate of ammonia	£0	2	2	per lb.
Chloride of ammonium	0	0	9	,,
Sulphate of copper	1	0	0	per cwt., 2½.
Bichloride of mercury	0	2	4	per lb., 2½.
Sub. ,, ,,	0	3	0	,, ,,
Chloride of zinc, cake	0	1	4	,,
,, ,, sticks	0	2	0	,,
Sulphate of iron	3	0	0	per ton, 2½.
Sulphate of Alumina	8	0	0	,, ,,

ELECTION OF A DISTRICT SURVEYOR.

AT the meeting of the Metropolitan Board of Works on the 24th ult., the first business was the election of a District Surveyor for East Kensington. There were thirty-one candidates, viz., Messrs. A. Ashbridge, T. Batterbury, H. H, Bridgman, C. W. Brooks, H. Cheston, S. F. Clarkson, J. S. Edmeston, G. Edwards, J. M. Ferguson, R. F. C. Francis, W. Grellier, J. Hamilton, W. J. Hardcastle, A. Harland, E. Haslehurst, G. Inskipp, G. Jackson, G. A. Lean. H. Lovegrove, H. McLachlan, E. Marsland, T, E. Mundy, R. C. Murray, W. H. Nash, O. Renton, W. Smallpeice, L. Solomon, W. L.. Spiers, W. H. Stevens, H. W. Stock, and E. Street.

In the preliminary voting, for reducing the number of candidates to six, the successful ones were Messrs. Ashbridge, Clarkson, Hardcastle, McLachlan, Marsland, and Street. The subsequent voting was as follows:—

	2nd Vote.	3rd Vote.	4th Vote.	5th Vote.	Final Vote.
Ashbridge	21	13	—	—	—
Clarkson	16	15	16*	—	—
Hardcastle	24	22	16*	10	—
McLachlan	14	—	—	—	—
Marsland	33	34	34	35	34
Street	24	21	29	22	10

* This tie was decided in favour of Mr. Hardcastle.

Mr. Marsland was therefore declared elected.

The Westminster Hall Restoration.—On Monday the Select Committee on Westminster Hall restoration held their last sitting, under the presidency of Mr. Shaw-Lefevre, and agreed upon their report.—*Times.*

C

* A paper by Mr. Thomas M. Rymer-Jones, Memb. Inst.C.E., F.R.G.S., and Mr. John Rymer-Jones, Memb. Inst.Tel.E., read before the Civil and Mechanical Engineers' Society on Wednesday, the 22nd inst. See p. 599, *ante*.

Illustrations.

CHELSEA VESTRY HALL.

We publish this week the selected design in this competition. The architect is Mr. J. M. Brydon, and the work is to be proceeded with at once. As will be seen from the drawings, the large hall is placed in the line of the present offices, and is reached by three entrances from King's-road. Corridors (lighted from the ceilings) on each side give access to the principal hall. Its dimensions are 81 ft. by 45 ft., and 35 ft. 6 in. high. A gallery is formed over the reception-lobby at the north end, and so does not project over the floor of the hall. Accommodation is provided for about 550 people in the area, and 150 in the gallery, or a total of 700 in all. The hall is lighted from the sides and ends, and has separate access to the platform at the south end. The retiring-rooms are on each side of the central corridor, which joins the reception lobby.

On the west side of the Vestry-hall is the secondary hall, lighted from the south and west. Its dimensions are 50 ft. by 31 ft., and 22 ft. high. Service-rooms adjoin it on the north side. The committee-room is in the corresponding wing on the east side, and measures 28 ft. by 27 ft., and 22 ft. high. Adjoining it is lavatory, &c., accommodation for the platform. Access is also provided to the corridor leading to the platform from Manor-gardens by the basement. There is a basement under the whole of the building, consisting of cellarage, heating-chamber, kitchen offices for public entertainments, spare room, lavatory, &c.

The style is English Renaissance, freely treated. Externally the buildings are to be faced with red bricks, with Portland stone for pilasters, cornices, window dressings, &c. Internally the halls and committee-room are to have dadoes and doors of wainscot or American walnut, and the walls above finished in plaster. The pilasters of the Vestry-hall are to be in marble or scagliola, but the question of further coloured decoration is reserved for future consideration, when the work will be thoroughly dry and in a fit state for painting. The estimated cost is 15,000*l.*

THE PINES, MIDHURST.

This house, the residence of Mr. John Costeker, stands in a prominent situation on the brow of a hill about a mile from Midhurst, overlooking the Chichester-road, and commanding extensive views of the South Downs.

It is built and finished in wood, no plaster being used internally either for walls or ceilings, and the foundations and chimney-stalks only being of brick. Mr. Frank T. Baggallay was the architect, and Mr. T. Gregory, of Clapham Junction, was the builder.

THE CHURCH OF ST. MICHAEL, AT COSLANY, NORWICH.

The church is a good example of the Perpendicular Period; has nave, north and south aisles, a chantry chapel to St. John the Baptist, and chancel and fine tower with eight bells. The south aisle known as Thorp Chapel has on the exterior one of the most remarkable specimens of flintwork in the kingdom. The following extract is quoted from the parish books:—

"At the East End of this Isle, is a Chapel of beautiful workmanship made with Freestone and black flints: this is the Chantry Chapel of the Virgin Mary, which was built and endowed with lands and houses in Norwich, Barnham Broom, Hunningham, Sprowston, Heigham, and Wood-Dallyng, by Robert Thorp, the Founder, in the time of Hen. VII. He lies buried here under a stone which hath his own Effigies, and those of his three Wives and three boys, and two girls, but the inscription is lost, though the most part of it is preserved by Mr. Weever, Folio 803. It had the Arms of Thorp. Arg. 3 Crescents Arg. on the first shield, and the same Arms impaled with those of his three Wives, his second wive's Arms remain, viz., a Tress nebulé between 3 wolves heads (erased).

Pray for the sowl of Robart Thorp Gentilman Citezen and Alderman of Norwich Founder of this Chappyll and Ile, with a Chantrie prest, he to sing perpetually for the sowl of Robart Thorp, the sowls of Elizabeth, Emme, and Agnes, sowls his Wyffs; the sowl of John Thorp his kindryd sowls and all Christen sowls, the which Robart . . . . .

The several Chantry priests that serv^{d} here are buried in this Chapel the first of which was Sir Richard Walloure or Waller.

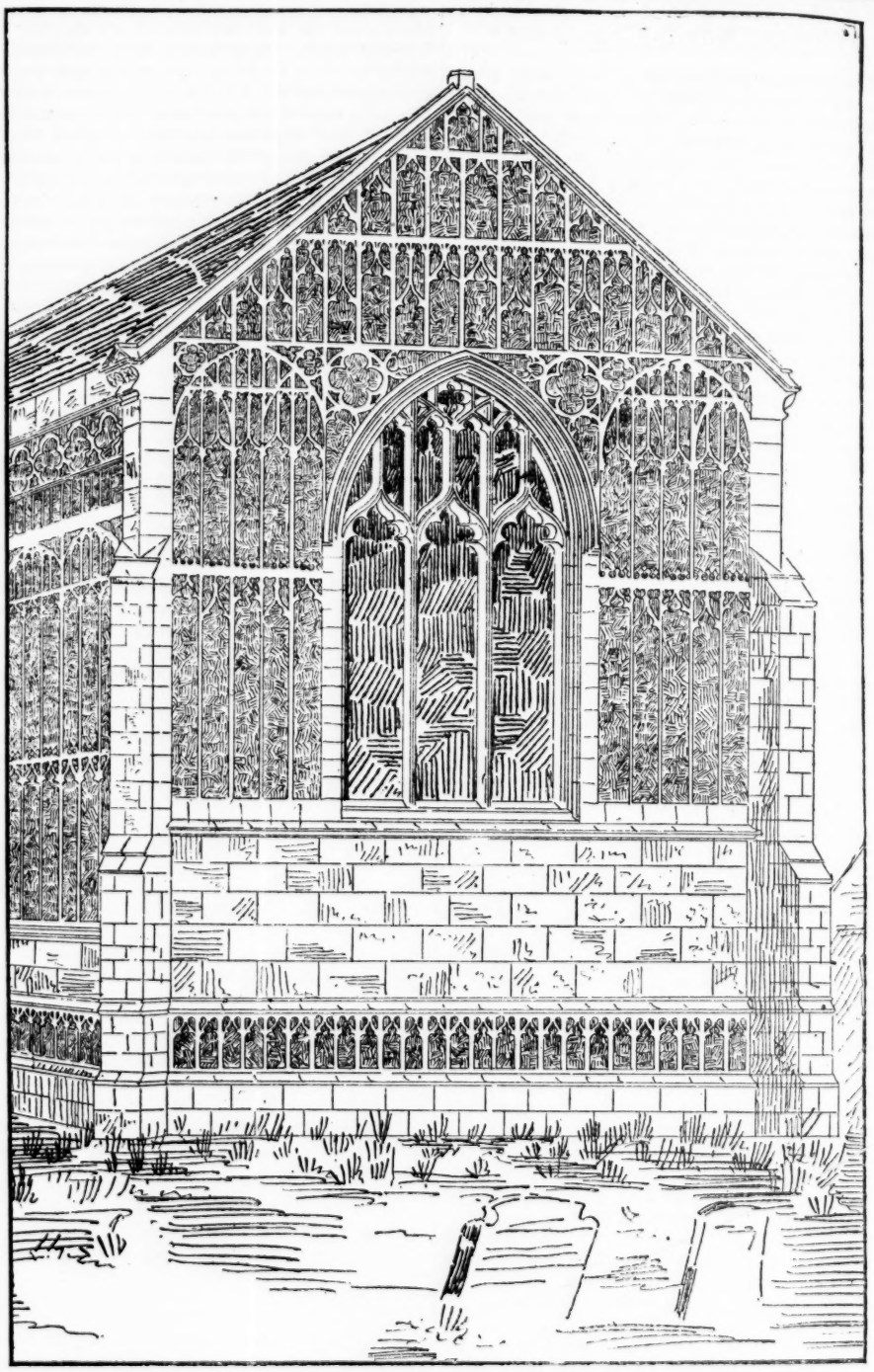
Anno. 1524 Robert Long citizen of Norwich and Agnes his wife gave to Gonvile Hall in Cambridge, the perpetual donation to this Chantry, on condition they constantly nominated an honest priest, or Fellow of their College, to reside constantly in the house belonging to Thorps Chantry priest in Norwich, and daily to serve the said Chantry."

It will be noticed that every compartment of the tracery is of a varied character, and the whole presents an excellent study of harmony and beauty in design. The south and east walls of the chancel consisting only of rough flint walling, and presenting a sad contrast to the Thorp Chapel, the opportunity was taken by Mr. H. Bullard to have the chancel walls faced with tracery flint-work. The east window was found built up inside the wall, and had for some centuries been blocked up. A new window on the old lines was therefore inserted, and the tracery on each side designed in proportion. The panels between the tracery are filled with black cut and squared flints, and laid so close (as in most good Norfolk flint-work) that the point of a knife can hardly be passed between the joints. The work has been executed by Mr. W. Hubbard, contractor, of East Dereham.

In the interior of the chancel the old choir seats have been removed, the floor of which has been raised, and, with the sacrarium, laid with a design of encaustic tiles by Messrs. Maw & Co.

New seats for thirty choristers, and reading-desk in pitch pine, have been provided, and a new organ has been built by Messrs. Norman & Co., of Norwich.

The whole of the works have been carried out from the designs, and under the superintendence of Mr. E. Preston Willins, A.R.I.B.A., Norwich. The ancient work is illustrated in the lithograph, from measured drawings furnished by Mr. Willins, and the accompanying cut illustrates the new work in the same style which has been added.

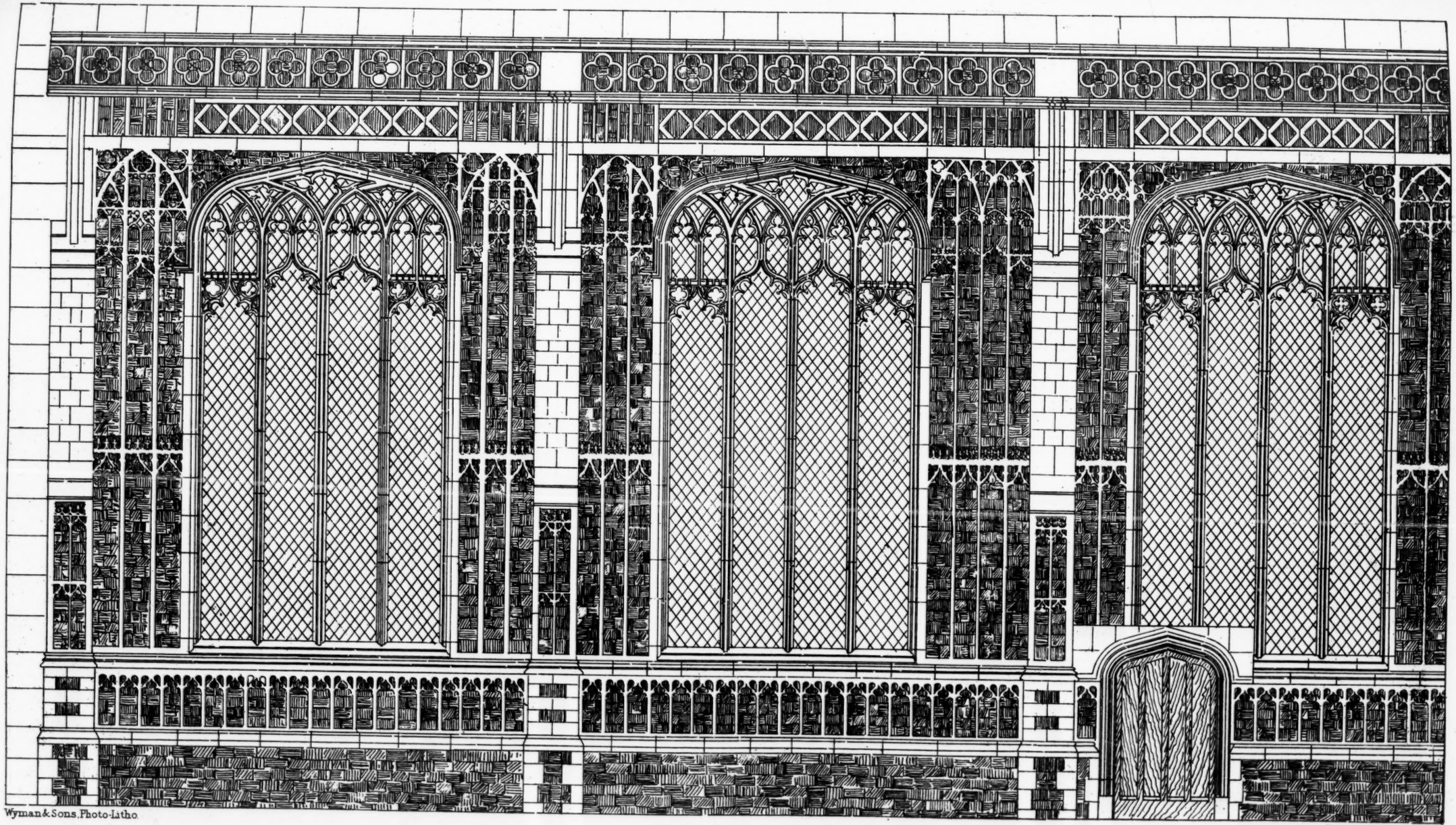


Chancel of St. Michael's Church, Coslany.—New Flint Tracery and Restored East Window.

OLD LONDON CHURCHES.

This week we give views of two more of the churches referred to in Mr. Loftus Brock's paper, for which see pp. 580 and 612.

The National Liberal Club.—It may be remembered that in the latter part of last year some correspondence took place in a daily paper, and was noticed in our columns, to the effect that Mr. Waterhouse's original design for this building had been spoiled by official interference on the part of a Government office. Mr. Waterhouse's explanation of the matter, showing that this charge has been unfounded, will appear in our next. We have been requested to mention this in advance, as it is desirable that the misunderstanding should be removed.



Wyman & Sons, Photo-Litho.

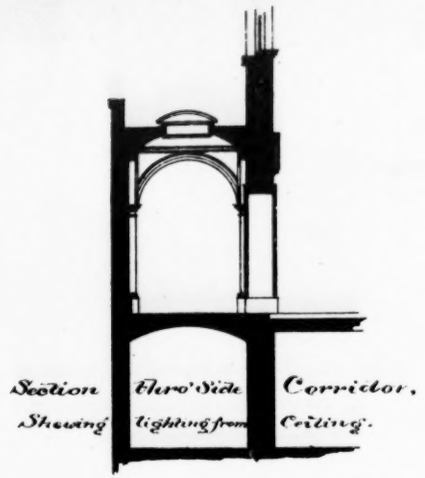
Ct Queen St London, W.C.

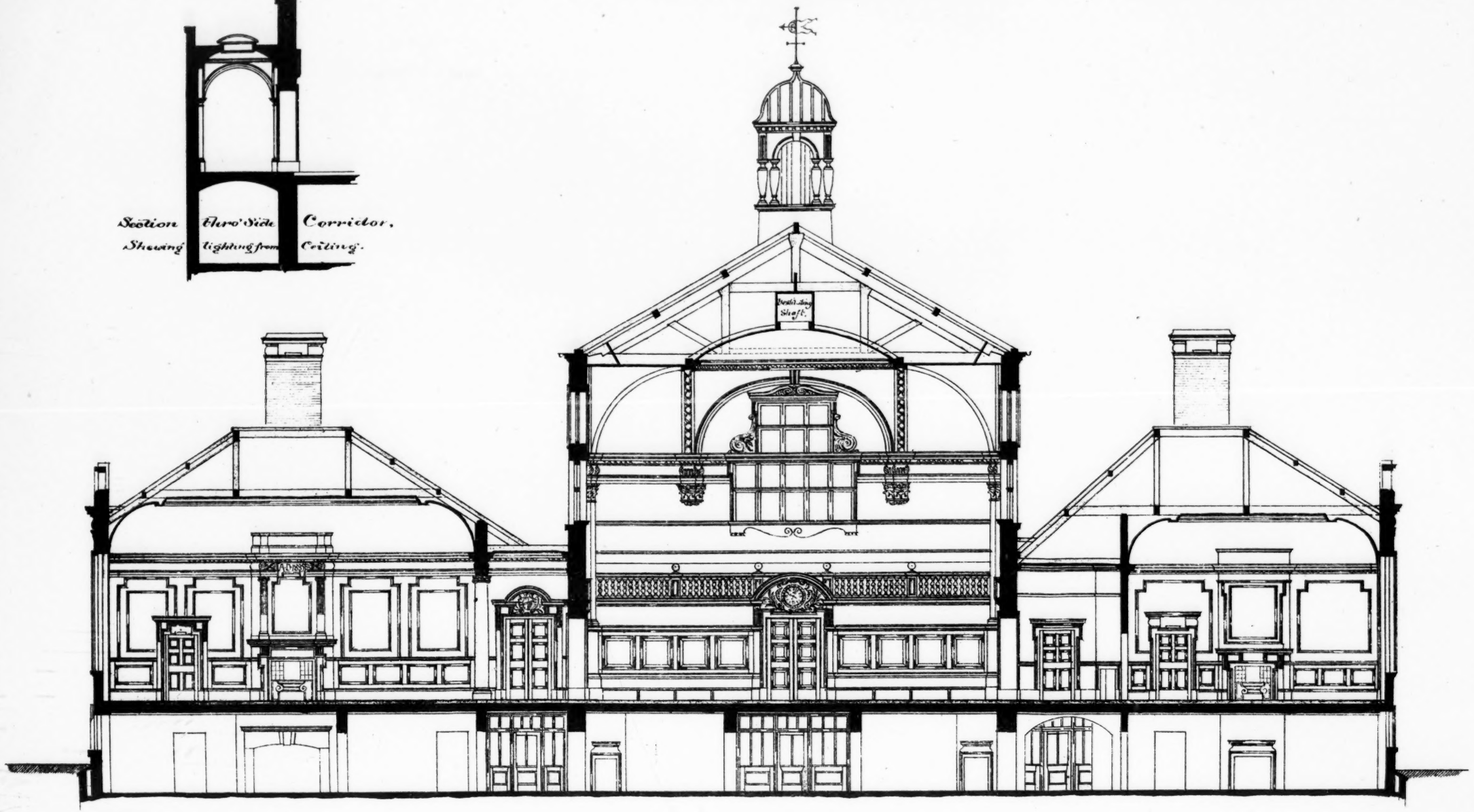
SOUTH AISLE, THORP CHAPEL: CHURCH OF ST. MICHAEL, COSLANY, NORWICH.

Drawn by Mr. E. Preston Willins, A.R.I.B.A.

C F Kell Photo-Litho London E C

OLD LONDON CHURCHES. *St. Olave, Southwark.*





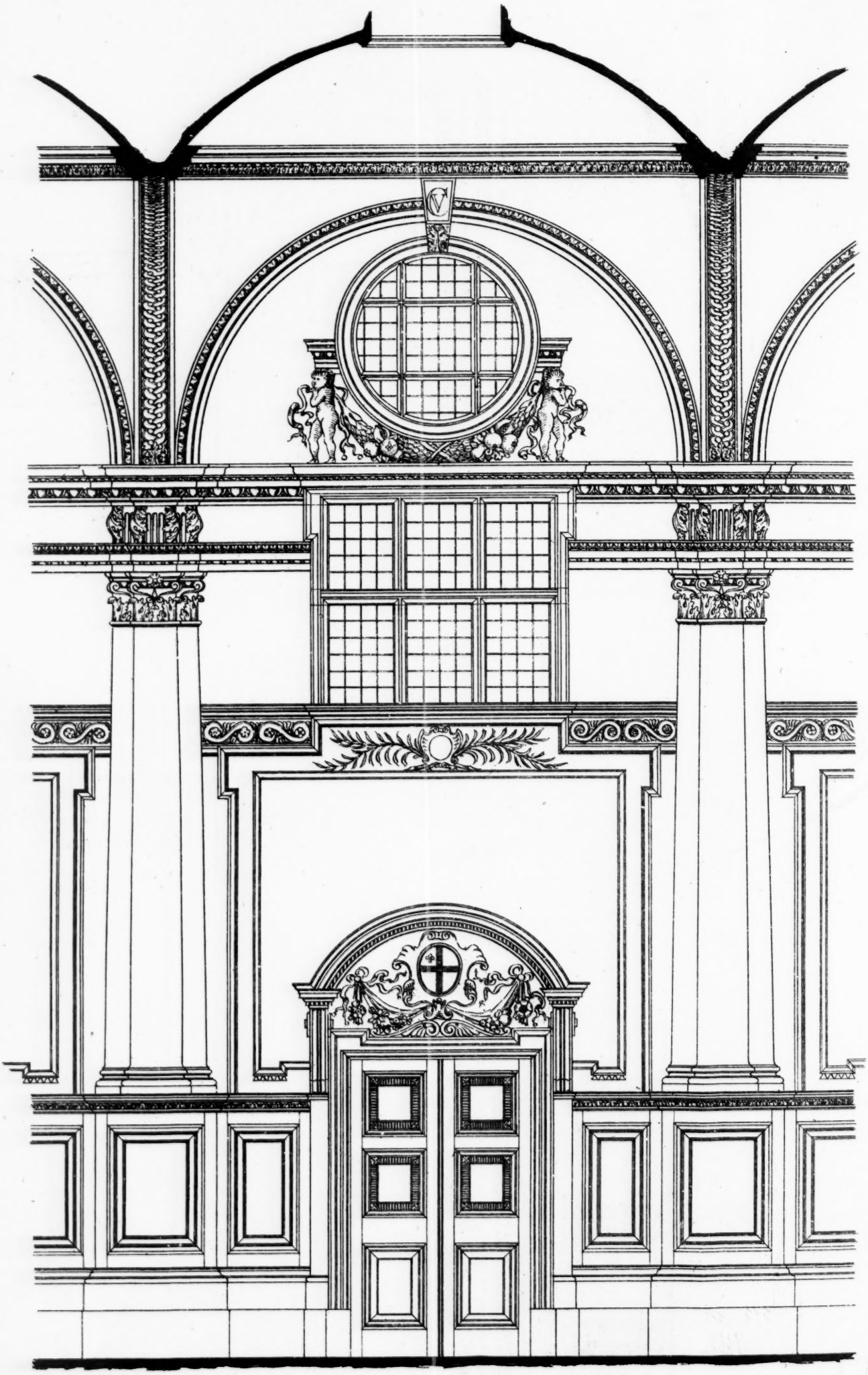
Section on line A·B:

Scale of 10 5 0 10 20 30 40 50 feet.

SELECTED DESIGN FOR NEW VESTRY HALL, CHELSEA.

MR. J. M. BRYDON, F.R.I.B.A., ARCHITECT.

C.F.Kell Photo-Lith & Printer 8 Castle St Holborn London E.C



Detail of One Bay of Vestry Hall.

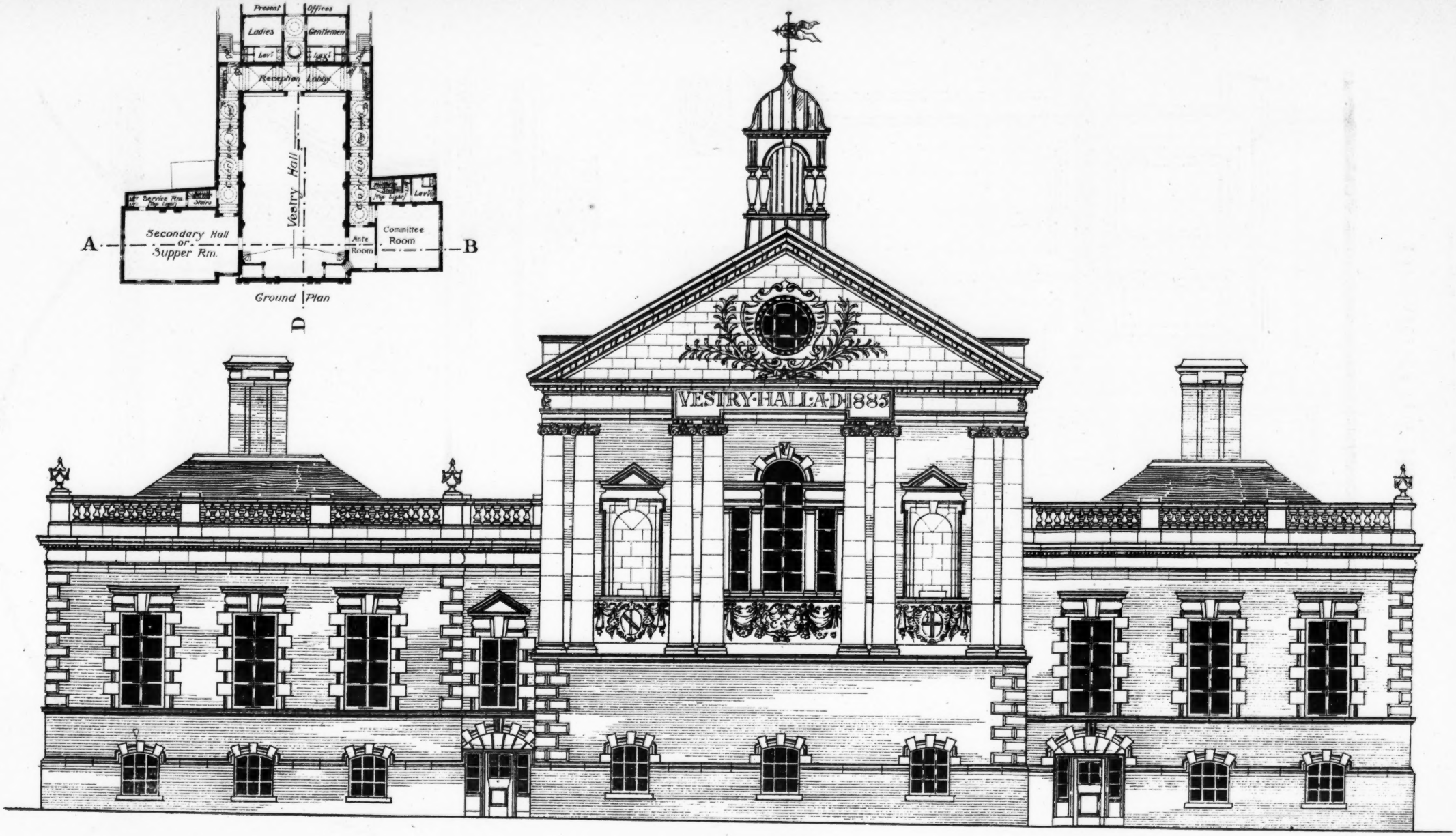
Scale of Feet 0 1 2 3 4 5 6 7 8 9 10 feet

C.F.Kell Photo-Lith & Printer, 8, Castle St. Holborn, London E.C.

SELECTED DESIGN FOR NEW VESTRY HALL, CHELSEA.

MR. J. M. BRYDON, F.R.I.B.A., ARCHITECT.

Ground Plan



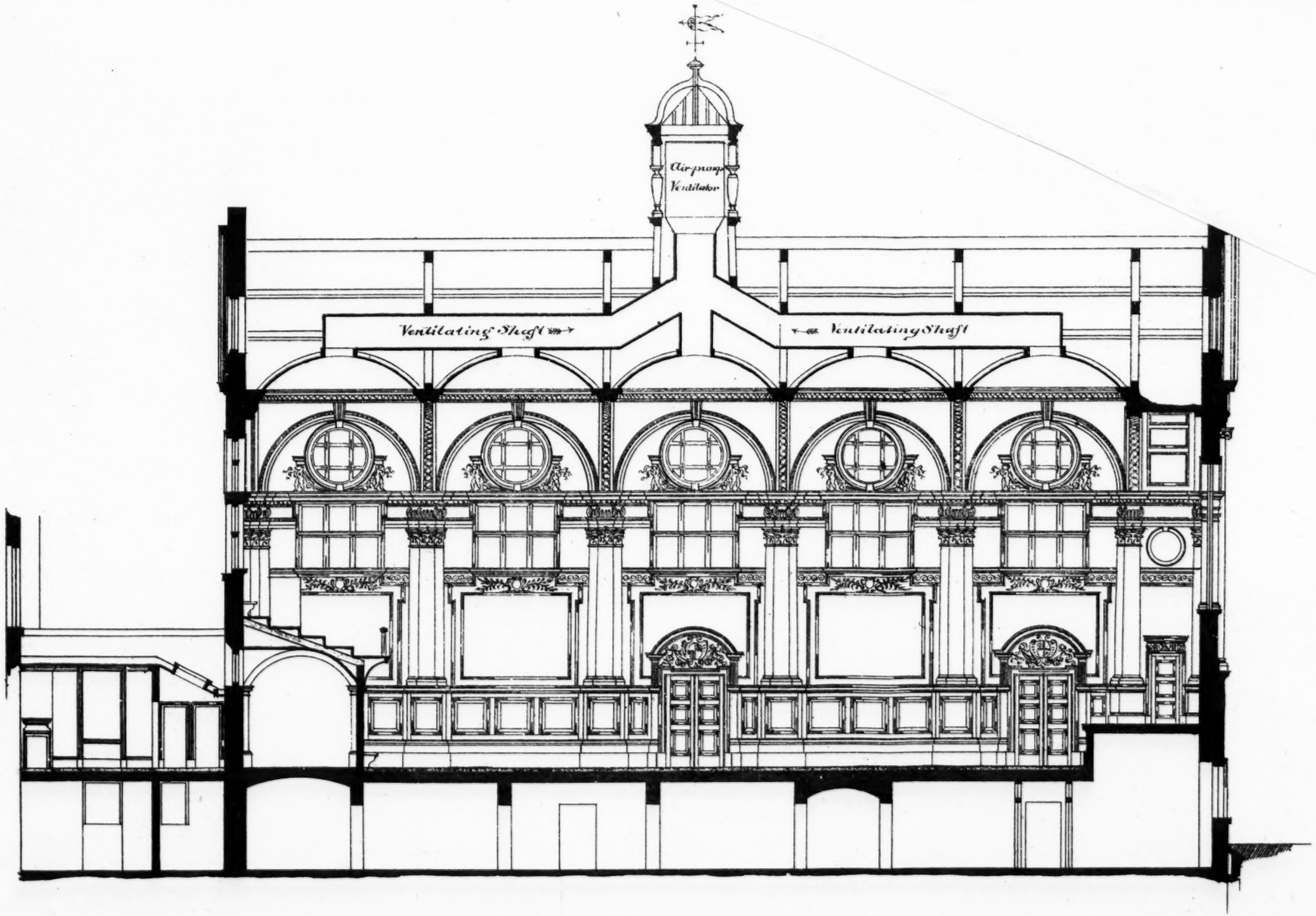
South Elevation.

Scale of 10 5 0 10 20 30 40 50 feet.

SELECTED DESIGN FOR NEW VESTRY HALL, CHELSEA.

MR. J. M. BRYDON, F.R.I.B.A., ARCHITECT.

C.F.Kell Photo-Lith & Printer. 8 Castle St. Holborn. London E.C.



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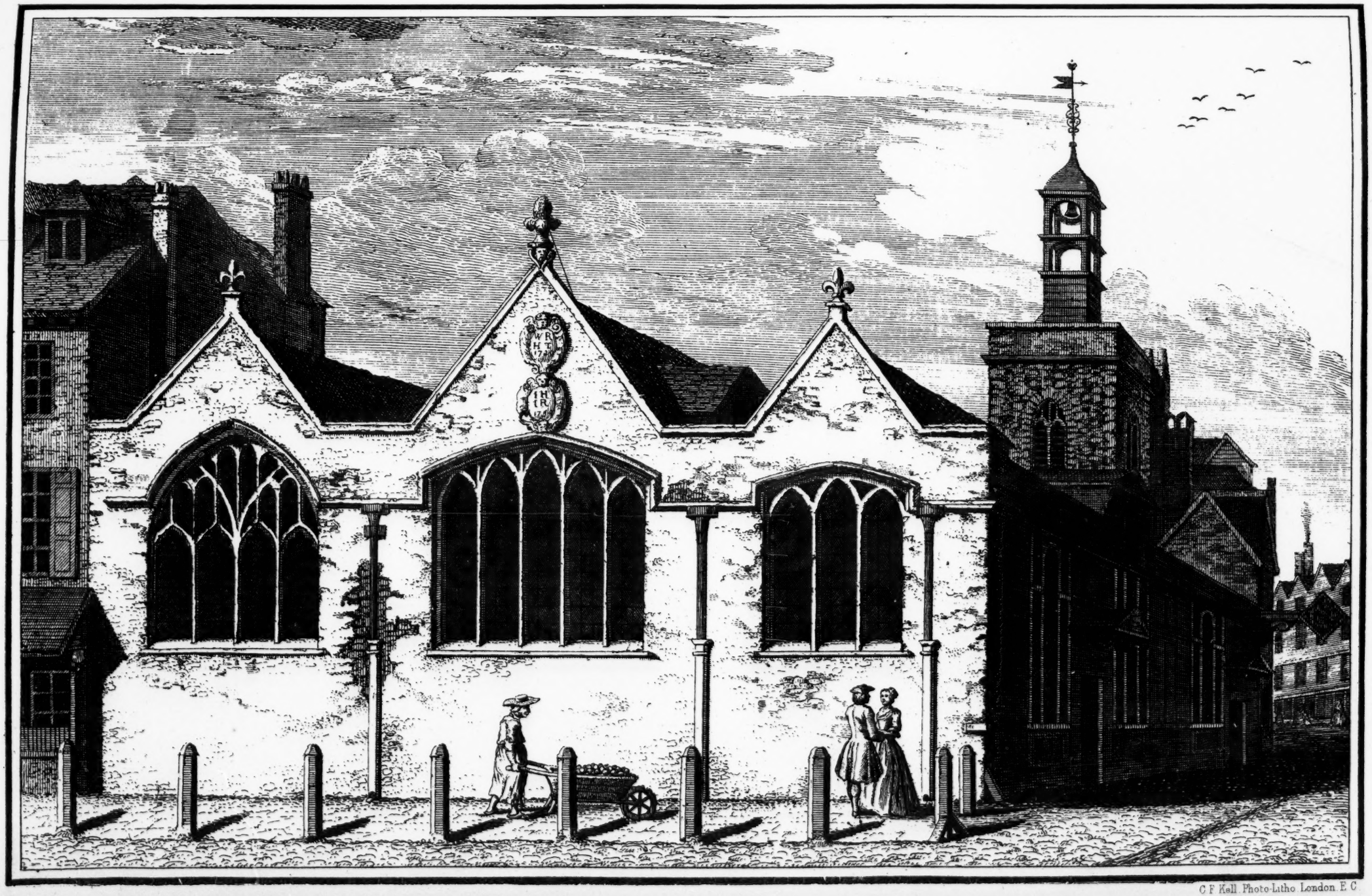
SELECTED DESIGN FOR NEW VESTRY HALL, CHELSEA.

MR. J. M. BRYDON, F.R.I.B.A., ARCHITECT.

C.F.Kell Photo-Lith & Printer, 8, Castle St Holborn, London E.C.



C F Kell Photo-Litho London E C

OLD LONDON CHURCHES. *St. Botolph Without, Aldersgate.*

Wyman & Sons, Photo-Litho

THE PINES, MIDHURST.—MR. FRANK T. BAGGALLAY, ARCHITECT.

Ct Queen St London, W.C.

"A PRISM FOR ARCHITECTURE."

ARCHITECTURAL ASSOCIATION.

THE ordinary meeting of the members took place on Friday, the 24th ult., Mr. Cole A. Adams, President, in the chair.

A vote of thanks was passed to Messrs. Isaacs & Florence, the architects of the Northumberland-avenue Hotel, for permitting the members to visit the building. Votes of thanks were also accorded to the Clerks of the Merchant Taylors' and Fishmongers' Companies, and to Mr. W. Hilton Nash, Surveyor to the former Company, in connexion with the late visits.

The following nominations for officers for next session were announced:—For President, Mr. C. R. Pink; and for Vice-Presidents, Messrs. J. A. Gotch and W. H. Atkin Berry.

Professor T. Roger Smith then gave an address entitled "A Prism for Architecture." He said that if a cylinder were pared down into a polygonal straight-sided figure, triangular or square, the result would be a prism, and if made of a transparent substance it produced certain results on the rays of light falling on it, spreading them out into different hues. This was what he had in view when he talked about the prism, which latterly had become a remarkable instrument of analysis in the hands of scientific men. The spectrum, and the distinct rays of light thrown out by the prism were then described, and the results to be deduced from its investigations. Besides the coloured rays of the spectrum, there were also a certain number of rays which were invisible, termed the dark rays. The question had therefore suggested itself to him some time ago, whether it were possible to do for architecture,—or, at any rate, for building,—something like what the prism had done for rays of light. Could they hit upon some simple method of spreading out the different constituents of building, so that they might be examined one by one; and that instead of having a series of whole buildings, they might be cut into pieces? His prism was really a system of analysis by which the different parts of a building could be taken to pieces and examined. Its merit, if it had one, was that it provided a place for everything. He would not attempt to go farther than the material part of the building, although it was possible to find a parallel to the dark, as well as the light rays, of the spectrum. As in the case of the seven colours of the rainbow, so building fell under seven heads or categories. The first was the floor,—perhaps the most important part of the building. The whole purpose of a building, unless it were simply a monument, was to provide a floor, to protect it with walls, to cover it with a roof, to let light in by windows, and to provide access by doors and staircases. But the floor was the object of the care of all the other constituent parts. It was physically and intellectually the basis of the building, and might be simple in its outlines, as in the Pantheon; complicated in shape, as in the plan of Westminster Abbey; or composed of an exceedingly large number of parts, like the Baths of Caracalla. It might be square or round, but whatever it was, it was shaped to meet the requirements and also the structural necessities of the case. They were in the habit of recognising the importance of plans, and in doing that they were to a large extent talking about the floor. The object of a plan was quite as much to define the floor as the walls, and practically the floor was the basis of the whole structure. The Professor here referred to the plan of an Egyptian temple, a large building containing a good many subdivisions, the part which produced a grand interior being the perfect forest of columns necessary to carry the roof. Assyrian temples were also complicated, there being an arrangement of long narrow rooms, arranged in or at round quadrangles. The next great building people, the Greeks, had structures far simpler in plan, and as a rule smaller. The Greeks also introduced the curved line, for the first time in architecture. Roman plans were at once varied and complicated, and the consequence was that their buildings were of almost every shape, and of the utmost degree of perplexity and complexity. Nothing could be a grander or more applicable plan than that of the great Baths of Caracalla. Christian architecture again depended largely for its plan on what the Romans had previously done. The first new departure in the Christian architecture of the West was the introduction of monastic buildings; but there was no remarkable innovation in the way of planning until the Renaissance, when the plans began to resume the complexity of the Roman plans. As regarded the actual construction of the floors, no part of the building was so simple. There was not much in the way of ornament to be done, the only grand ornamental floors being the Roman mosaic floors, and the sometimes magnificent tiled pavements of the Middle Ages. Westminster Chapterhouse possessed one of the finest of these tiled pavements, and the Abbey itself had a specimen of Alexandrian mosaic on a large scale. The art of designing floors, and the walls connected with them, was necessary, and at the same time fascinating and interesting. The placing of all the columns and features of a building, and especially connecting together the various leading features in a complicated structure, was a thing requiring a great deal of imagination and skill, and in which the mind could exercise itself in the same way as in any other part of the design. The second feature was the walls, the object of which might be stated to be three-fold: first, to enclose the floors; secondly, to carry the roof; and, thirdly, to form an object to be looked at outside and inside. The shape of the floor dictated the length of the wall, whether it should be curved or straight, and its position; but beyond that, the builder had to exercise his ingenuity in the height, thickness, outline, and the simplicity or complexity of it. Perhaps the most important matter in connexion with this was the sky-line. In the majority of early building this was straight, as in the case of the Egyptian temple at Denderah, and this was the general outline in the majority of those temples, varied to some extent by the increased height given to the pylons. As far as was known, the Assyrian buildings were also straight-topped, but when they came to those of the Greeks, a remarkable innovation was introduced, viz., the pediment or gable. The gable once introduced was never abandoned; it was sometimes flat, and sometimes steeper in its arrangement, but it had remained as one of the most interesting features connected with the wall of a building. The next thing, introduced after the gable, was the tower, and this was almost, if not quite, a Christian introduction. There were some tower-like buildings in Assyria, but it was not until Christian churches began to be built that the tower was a usual element in the composition of a building. The lecturer here pointed to Romanesque, English Romanesque, German, and French towers, explaining that the tower developed into the turret, and also into the slender turret or minaret. One notable point with regard to the wall was its thickness, and this became less at those periods when structural skill was greatest. Construction was an element of great importance in wall building, and was a matter which deserved the utmost possible attention, as any mistake was sure to tell afterwards, and at a time when remedying it was almost impossible. The stucture of a wall varied very much, as it had to be built in most cases of the materials ready to hand. It consumed so much material that, if brought from any distance, the expense was so great that men were generally content to use something within their reach; therefore, the geology of the world had a good deal to do with dictating what materials should be used for the purpose. Reference was then made to the Roman walls, and to the interesting methods by which these remarkable structures were built. In the Middle Ages brick went greatly out of use, especially in England and France, little else being used except stone in the Gothic period, after which came the omnivorous use of everything in the Renaissance. Another important matter was the compound construction of many walls, they being faced with other materials, more precious, or specious-looking, than what the heart was composed of. Almost every wall had a base, a body, and a top. In the case of the Greek temple the base might be said to be the steps; then there was the body; the top being the overhanging screen. A feature of Mediæval wall-building was the buttress. The Romans were in the habit of making the piers inside rather than outside, but the Gothic architects introduced a new feature in the buttress, a feature cultivated with most success in countries where the sunlight and the light during the greater part of the day were level, so that the best effects of shade were produced by the piers which projected from the wall. The third division was naturally the roof. In many countries, where the climate was hot, people wanted to get on the top of the roof for coolness; therefore a roof that would serve as a terrace was frequently to be met with. One reason why the gable made its appearance among the Greeks was, he imagined, that the climate was sufficiently temperate for people not to trouble about having a terrace roof to all their buildings. Then the roof got sloping, and there were two or three other things which had to do with the pitch. In countries where rain, snow, and inclement weather were experienced, the roof was generally found to be steep, in order to throw off the snow, as in the steep-pitched roofs of Central and Northern Enrope. This, again, was complicated by one or two considerations, there being some countries where in the summer it was hot, while in the winter there was much snow, and where this was the case, there was a disposition to keep the roof comparatively flat, and to extend its eaves; Switzerland being a good example. Lastly, the nature of the roof-covering made a considerable difference, there being always a tendency to take the most economical pitch. The highest development of the external steep roof was the spire. The speaker here referred to drawings of the magnificent spires of Lichfield Cathedral and Angoulême Cathedral, and of the roof of Westminster Hall, the masterpiece of European carpentry.* The vault began with the Roman use of the arch, and passed through the series of the wagon-headed vault, the cross vault, leaving the architect free to deal with the wall and space beyond. In the Middle Ages the vault developed through a series of wonderful transformations, until it reached its acme in such structures as Henry VII.'s Chapel, Westminster, and King's College Chapel, Cambridge. Another kind of roof grew out of the vault, viz., the dome, invented by the Romans, and, after being largely developed by them, taken to Byzantium, the architects there producing magnificent domical structures, the climax of which was found in Santa Sophia. Western Christian architecture neglected the dome, and down to the Reformation there was no important domed Christian church except the Duomo at Florence. At the Reformation the Christian architects went back to the original Roman dome, and produced the great series of domical structures, of which St. Peter's was the largest, and St. Paul's incontrovertibly the finest. The dome was taken up by another offshoot of Roman architecture, the Saracenic, and treated in an entirely different, and at the same time exquisitely beautiful, manner. In addition to these, there were all the endless varieties of ceilings, timber and plaster, and combinations of domes with them, which came under the head of roofing. The fourth essential for building was the openings. Buildings, till the invention of iron girders, which had their openings covered with the lintel, had square-shaped and narrow openings. The moment the arch was introduced it began to be found that openings could be of almost any size and shape. The Egyptians had to carry their roofs by means of lintels, as in the case of the Great Hall of the Temple of Karnak. When the arch came in the whole system of construction and arrangement was altered, and the next great step was when the arch passed from the Roman to the Mediæval builders. The lecturer here referred to a section of Durham Cathedral, showing the arched openings occurring in the interior, and their grouping; also to an elevation of the Coliseum at Rome, showing that the grouping of openings had begun to be of importance in the design of the architect. The filling up of openings in Mediæval times led to most magnificent results, as in the case of a drawing of the Ducal Palace at Venice, showing tracery for filling in the openings of the upper arcade. A drawing of part of Carlisle Cathedral showed one of the most elaborate tracery windows in England. There were other ways of filling openings which the circumstances of Eastern architecture required. In Arabic architecture they would find marble buildings, in which the openings were filled with beautifully-constructed grilles of simple and effective woodwork. Fenestration began to be an important matter in design, and to take the place of the grouping of columns. These were the four most important elements of construction, and the remaining three were really architectural features. The first and most important

* An interior view of this roof, from a drawing by Mr. F. T. Dollman, appeared in the *Builder* for April 4 (see pp. 490-491, *ante*).

of these were the columns. A great number of buildings existed without columns, and were they not a beautiful architectural feature they would be absent in many cases where they are now to be seen. The column was divided like the wall into three parts, the base, shaft, and cap. In the columnar styles, viz., those where the column played an important part, there was infinite variety. The Greeks grouped their columns into three periods, or rather, into two, the Doric column with a moulded cap, and the Ionic column with an ornamented cap, these two being the parents of nearly every class of capital in use since. As soon as the arch came in the column sank from being an integral part of the structure to the position of an ornament. The sixth element was the ornamentation, which, leaving out colour, might be classed into two particular groups,—mouldings and sculptures. Mouldings had two different objects, one being to produce a profile, a Roman cornice being a good example, with its projection and shadow; the other object, and the most general in Gothic mouldings, being to draw a line, or series of lines, in the building. Mouldings in the hands of the architect were the same as a brush with dark colour in the painter's hand. An important matter for study was the size of mouldings relatively to their position. A moulding which was right when near the eye would be too small if placed high, and would also probably be in bad proportion. In the same manner a moulding which seemed all right when one looked up at it would be two large when brought down near the eye, and would require correcting in its profile that the amount of foreshortening might be obviated. The relation of the profile of mouldings to the material was well worth consideration. In order to get lights and shadows in stone mouldings, the features must be well defined, the projections considerable, and the hollows large. In the thirteenth century stone mouldings were undercut in the most extraordinary degree. White marble, again, was a material of exquisite surface, which was more easily got thin than thick, and the mouldings for it were comparatively flat, though producing, perhaps, a finer effect than the bold stone mouldings. Then there was wood, which had not the lustrous colour of the marble, and accordingly the mouldings appropriate for it were midway between those for stone and marble. Sculpture was sometimes included in the architecture, and sometimes added as an ornament, and framed in the architecture. Greek architecture supplied examples of both modes of treatment. The seventh and last element was colour. It seemed that where there was the most sunshine there was found the greatest desire for colour. In Assyria, Persia, and Greece there was a large use of colour; while at Pompeii, again, there was a specimen of the brilliant Græco-Roman colouring. In Arabic buildings they found a finer feeling for colour and more success in its use than in the Western styles. In Byzantine architecture it was largely used, and it was difficult to say how much colour was used in Gothic work. He believed a great many of our Mediæval buildings were coloured, though not brilliantly. But as a compensation for that there was the most brilliant of all the inventions of the colourists, viz., stained glass. No invention in architecture had possessed the beauty of this, and possibly the reason why many of the buildings were not highly coloured was because they were so full of this brilliantly-coloured glass. He would remind them that no architectural work was perfect without colour, and, though they had to study it under great imperfections, it seemed as if things were a little more hopeful than they used to be. Having gone, then, through all the colours of his prism, he might be asked if he had anything to say about the dark rays. There was a side of architecture which could not be called bricks and mortar, but it was none the less as real and great a part of architectural success as anything he had referred to. This must be left for them to study elsewhere, or to be talked about another time. He would only say in conclusion that as he had referred to something which was, perhaps, a parallel to the seven hues of the rainbow, the other part of the spectrum had been brilliantly treated by one of the greatest masters of criticism the world had seen in "The Seven Lamps of Architecture."

The Chairman, in opening the discussion, said that there must be only one opinion as to the lecture they had heard. Its whole object was to arouse their thinking powers. Speaking of roofs, when they looked at the drawings of Westminster Hall by Viollot-le-Duc and Dollman, they could only be grateful that the diabolical attempt a short time ago had not damaged to any appreciable extent this magnificent work of art.

Mr. Slater, in proposing a vote of thanks to the Professor, congratulated him on his lecture. At the same time, such an enormous ground had been covered that it was impossible in the discussion to follow him. The Professor had stated that the Egyptian temples were extremely complicated, but he could not quite agree with this, as they seemed to be simply reduplications of form. It had been also said that the fact of the buttress being used in Mediæval buildings was accounted for by the desire to get shadows cast by the sunshine. This seemed to him to be rather far-fetched, and it appeared more likely that in the Mediæval churches there was a desire to hear and see, so that they got rid of all the interior projections, and so put the buttresses outside. He would like to know why the Persepolitan base had not been perpetuated? What a curious thing a prism for architects would be, and if their rays were passed through it; for besides the bright lights, some of those gentlemen who dubbed themselves surveyors, &c., might cast a large number of dark rays.

Mr. Blagrove seconded the vote of thanks, which was very cordially received.

Professor Roger Smith, in replying, said that he could not throw much light on the base of Persepolis. The more ornamental one appeared to have given rise to the Ionic base, but why it was lost sight of by the Greeks afterwards he could not tell. One reason must be that the Attic base, which was in common use, was very suitable for the purpose, and was seldom departed from. There were, however, a good many eccentric varieties of bases in Greek architecture, and especially in Asia Minor. He agreed that the Egyptian temple was a simpler building than the Roman bath; but the step from Egypt to Greece was one he believed from complexity to simplicity. He did not quite like to give up his development of the buttress. Angle buttresses at the corners of towers were often introduced where they could well have been spared, and had England and France been countries like Italy or Egypt, we should have had thicker walls, like those in Italian Gothic, with the buttresses seldom beyond little strips. He therefore believed that the artistic effect had a good deal to do with the matter.

THE ALBERT EXHIBITION PALACE, BATTERSEA PARK.

WE have from time to time mentioned the progress of this building, and its practical completion was celebrated by a luncheon given in the building on Saturday last to a large number of gentlemen interested, commercially or socially, in the success of the undertaking, which is one that has our best wishes. It overlooks Battersea Park, being divided therefrom only by the roadway which skirts the Park. The site of the Albert Palace and its grounds is held on lease from the Crown, and special mention was made of the facilities which had been afforded to the company by Mr. Shaw-Lefevre and the Office of Works, the Department preferring to let the ground for a place of wholesome recreation combined with an open space of considerable area rather than to let the land on ordinary building leases. The building, as will be known to many of our readers, is the glass and iron structure first erected in Dublin, and re-opened by H.R.H. the Duke of Edinburgh in 1872, with an Exhibition of Arts, Industries, and Manufactures, under the directorship of Sir Edward Lee. The building as re-erected at Battersea Park consists of a nave 60 ft. high, 473 ft. long by 84 ft. wide, and with a gallery all round. There is an apse at the centre of the nave, 50 ft. by 84 ft. The annexe, known as the "Connaught Hall," 60 ft. high and 157 ft. long by 118 ft. wide, with a double gallery all round, is adapted for musical entertainments of a high class, and it is in this hall that the grand organ is erected. This organ, one of the largest in the world, is the celebrated "Holmes organ."

The entire roof of the nave is covered with amber-coloured cathedral glass, in order to obviate the use of unsightly awnings or blinds. With the assistance of Dr. C. Dresser the interior of the structure generally has been decorated in colour. In the decoration of the rooms appropriated to the refreshment department there is an entire absence of the "looking-glass and glitter" style of decoration which is so general in such places. On either side of the large dining-hall are some handsome white marble columns which came from Baron Grant's mansion at Kensington. The external masonry of the buildings consists largely of the masonry of the Old Law Courts at Westminster.

The gardens are being laid out by Mr. Frazer from plans prepared by Sir Edward Lee, and under his immediate supervision and direction.

The picture-gallery, extending nearly the whole length of the building, is excellently lighted. Nearly an acre and a-half of the Palace ground has been set aside for a lawn tennis court. The conformation of the apse renders the nave better adapted for promenade concerts than, perhaps, any other place in the metropolis, and here an orchestra, capable of accommodating 150 instrumentalists, has been erected.

The building is warmed by hot-water pipes from four large boilers of the Trentham Cornish type, fitted with smoke-consuming doors and every modern improvement. The pipes in the Palace are on the low-pressure principle, are 4 in. in diameter, and arranged in channels containing nine rows of pipes, the channel being so constructed that a supply of air is constantly brought up under, over, and between the pipes, and comfortably warmed, previous to passing through the gratings. The gas lighting arrangements are very extensive. There are three large meters,—one 2,000-light meter for the main building, which weighs between eight and nine tons when charged with water,—one 1,000-light meter for the concert-hall, and one 300-light meter for the picture-gallery and side building. There are about eight or nine miles of mains and wrought-iron gas-pipes in the building. The building generally is lighted by groups of lights on large brackets, and the galleries are mostly lighted with star-lights. There are over 3,000 gas-burners in the building, and the whole of the work has been very well carried out by Messrs. Strode & Co., of Osnaburgh-street and St. Paul's Churchyard, E.C. The sanitary fittings are by Mr. George Jennings.

Seeing that the "Palace" is situate in the midst of a large population, and that it is easily approachable from all parts of London by three railways and by tramways, as well as by steamboats in summer, it ought to be a success, and no doubt will be, if well managed.

ARCHITECTURAL ASSOCIATION.

VISITS TO ST. BARTHOLOMEW THE GREAT, SMITHFIELD, AND TO THE CHARTERHOUSE.

THE seventh afternoon visit this year of this Association was an archæological one, and was made last Saturday, the 25th of April, to what remains of the very interesting old Norman Church of St. Bartholomew the Great, West Smithfield. The members assembled at three p.m., and were received by the Rev. W. Panckridge, the rector, and Mr. Aston Webb, architect for the proposed restoration. Mr. G. H. Birch, architect of "Old London" at the Health Exhibition, was also in attendance. The Rev. W. Panckridge commenced by detailing the history of the ancient church and priory, from its foundation, in 1103, by Rahere, the founder of St. Bartholomew's Hospital, close by, down to the years 1863 and 1866, when it was restored to its present condition by Professor Hayter Lewis. He also pointed out the chief features in the church, and directed attention to the two chief monuments: one the tomb of Rahere, the first prior, on the north side of the choir; and the other, a large mural monument to Sir Walter Mildmay, Under-Chancellor of the Exchequer *temp.* Queen Elizabeth, 1589, and which is fixed in the south aisle. The tomb of Rahere, and the pulpit, &c., can be distinctly seen in the illustration we recently published of the north aisle and arcade.

Mr. Aston Webb naxt described some plans which were exhibited; one, which was drawn with the assistance of Mr. Birch, showed the exact condition of the church, and its nave and cloister, &c., as they existed in 1530; another plan, shown by way of contrast, of the church as now existing, was virtually the same as that published by us on March 28th. Mr. Webb explained what was proposed to be done if

funds were forthcoming, viz., the purchase of the fringe manufactory at the east end, and which partially overhangs the altar supported by an iron girder, as shown in our "Interior looking East," and on the small plan we published at the same time. These buildings, Mr. Webb said, may probably have been latterly used as a Prior's house, but in his opinion were undoubtedly first erected as a Lady-chapel. The north transept was now a blacksmith's forge (as they could hear). The total length of the church formerly was 280 ft. by 60 ft. wide, with apse, transepts, choir, and nave.

The visitors then perambulated the church, and the fringe factory, and also the crypt under the same, every corner of which was minutely examined, particularly its external walling, which appeared to consist of massive masonry of large stones, lately used as coal cellarage and wine-bins, and which will require a good deal of excavation and clearing away of internal brick divisions, to form an adequate opinion of its former uses. Many of the members also mounted the old brick tower and belfry, from the summit of which a good view was obtained of the walls of the factory and other adjacent buildings, showing the extreme probability of the plan of the church as it was in 1530.

The members then departed under the leadership of the Rev. W. Panckridge and Mr. Aston Webb to the Charterhouse, through Cloth Fair, and noticed, *en passant*, the old Whittington Inn, which owes its preservation to the intercession of the London and Middlesex Archæological Society, and a view and description of which were given in the *Builder* of January 14, 1882, under the name of the Stingo Tavern. The Charterhouse (a corruption, as every one knows, of Chartreuse) was so called from a monastery of Carthusian monks, founded in 1371, on a pest-house field, by Sir Walter Manny, knight. The last prior was executed at Tyburn, May 4th, 1535. The Priory was then dissolved and was afterwards given by Henry VIII. to Sir Thomas Audley, Lord Chancellor. Queen Elizabeth granted it to Thomas, Earl of Suffolk, who sold it to Thomas Sutton, May 9, 1611, for 13,000*l.*, and he endowed it as a charity by the name of the "Hospital of King James." He died Dec. 12, 1611, before his work was complete, and was buried in the chapel of the hospital, beneath a monument, the work of Nicholas Stone and Mr. Jansen, of Southwark. The chapel and the tomb of Sutton, and other ancient portions of these interesting premises, having been inspected, the visitors departed.

THE ART-UNION OF LONDON.

ANNUAL MEETING AND PRIZE DISTRIBUTION.

THE annual meeting of the Art-Union of London was held in the Adelphi Theatre on Tuesday last, Mr. James Hopgood, Member of the Council, in the chair, in the absence of Lord Houghton, the President, who is now in Italy.

Mr. Hallett, Member of Council, read the annual report, from which we extract the following paragraphs:—

The subscription of the year amounts to 8,786*l.* 8s., and the Council would have been well pleased had they been able to announce a more favourable result, but, in face of the continued universal depression, they cannot but feel that the amount collected is more than could be reasonably expected. The accounts of the year have been audited by Messrs. Geddes and Hicks.

The following is a brief summary of the receipts and expenditure.

Amount of subscriptions		£8,786	8 0
Allotted for prizes	£2,265 0 0		
Set apart towards providing works of art for accumulated payments	564 0 0		
For print of the year, almanack, exhibition, report, and reserve	2,838 12 2		
		5,667	12 2
Agents' commission and charges, advertisements, printing, postage, rent, &c.		3,118	15 10
		£8,786	8 0

The Council have lately had an opportunity of acquiring the copyright of a very faithful portrait-bust of the late General Gordon, by Mr. R. B. Stocks, a Gold Medallist of the Royal Academy,—and they have to express their acknowledgments to Sir Henry and Lady Gordon for giving much time and trouble to the superintendence of the work with a view to obtain a satisfactory likeness. It has been pronounced a great success.

The amount to be expended on prizes will be thus allotted:—Original painting, "*Vanguard*," 21*l.*; 1 work at 100*l.*; 1 at 75*l.*; 1 at 60*l.*; 2 at 50*l.* each; 3 at 45*l.*; 3 at 40*l.*; 4 at 35*l.*; 4 at 30*l.*; 5 at 25*l.*; 7 at 20*l.*; 12 at 15*l.*; and 21 at 10*l.* In addition there were 50 terra-cotta busts of General Gordon; 80 sets of designs from English history; 50 portfolios of 24 plates of animal life; these making, with the prizes given to unsuccessful members, 545 prizes.

In our report for 1884 we noticed the death of Mr. Thomas Holloway, one of the most munificent patrons of art in late years. Mr. Holloway has left behind him an institution unparalleled in its philanthropic intention at this day. Some years before his death he called a meeting of persons interested in the higher education of women. It was well attended, but led to no practical results, and shortly afterwards he determined to take on himself the whole burden of building and endowing a college, on such a scale of liberality and magnificence, that we must go back to the times when kings and cardinals endowed colleges at Oxford and Cambridge to find any parallel to it. A splendid site, about a mile beyond Egham Station, on the South-Western Railway, of about 96 acres in extent, was purchased, and a building was begun, from designs by Mr. W. H. Crossland, a pupil of the late Sir Gilbert Scott,—in whose earlier work for Mr. Holloway, the Gothic Sanatorium, at Virginia Water, the influence of his master is conspicuous. The building at Mount Lee, so the place is called, covers more ground than any college at Oxford or Cambridge except Christ Church, Trinity, and St. John's.

The purchase of several pictures of the English school by Mr. Holloway excited much attention at the time, and it is now known that these works will find their resting place at the new college. It is expected that the whole institution will be ready in a few months to begin work; and then England will be in possession of the most magnificent endowment ever made in this country by a private individual. Taking the cost of the Sanatorium, and of the college, and the pictures placed in it, the total amount of Mr. Holloway's gifts to the nation reaches, if it does not exceed, a million sterling. It may be mentioned that the contract for the erection of the college was signed in July, 1879; that the work was finished within the stipulated time; and that there was not a shilling of extras on the contract sum,—257,000*l.*

There are not many vacancies in the ranks of the votaries of art to record during the last year.

In the early part of 1884, Mr. W. L. Leitch, V.P. of the Royal Institute of Water-Colours, died. Mr. Leitch began his artistic life as a scene-painter in a provincial theatre in Scotland, of which he was a native, at a few shillings a week,—but his perseverance was not to be mastered,—and the number of his sketches was so large as to form a few months ago the larger part of the 700 lots offered for sale after his death. Soon after his removal to England he became instructor of painting to the Queen and her children. An interesting biography has been written of him by Mr. A. McGeorge.

In the latter part of last year died Mr. F. W. Hulme, a landscape painter of repute.

Early this year the Royal Institute of Painters in Water Colours lost Mr. J. W. Jopling, who worked in a broad and striking manner.

On the 24th of February last died Mr. E. W. Wyon, the youngest and last surviving son of Mr. Wyon, chief engraver of the Seals to George III., an artist who flourished at a period when seal and medal engraving was considered to be a branch of fine art, and duly recognised as such by the Royal Academy, when dies cut in steel were the subjects of prizes awarded by that body. Mr. E. W. Wyon assisted his brother Benjamin in many of his works, and at a later date produced several statues. He was a frequent exhibitor at the Academy since 1831. With the Art-Union of London Mr. Wyon had an intimate connexion for some time. In 1841 it was determined by the Art-Union to endeavour to establish the production of artistic statuettes in bronze. So little was then known of the art in this country that Mr. Wyon (to whom was entrusted the reduction and casting of the Society's first work, the beautiful Michael and Satan of Flaxman) had the greatest difficulty in finding workmen able to undertake the task, and he had actually to personally superintend and aid in building the furnace necessary for the purpose. However, by dint of perseverance, a very satisfactory copy in bronze of the above group was produced, and this was the inauguration of that series of bronzes to which we can point with satisfaction, as not yielding in excellence to the work produced by Barbedienne or any other foreign house. Of fine works of this kind in England this Society was undeniably the originator.

In Mr. J. J. Jenkins, the Royal Society of Painters in Water-Colours has lost one of its ablest and most accomplished members. Born in London in 1811, he died on the 9th of March last, having for a considerable time suffered ill-health. To Mr. Jenkins the press owes that great accommodation, the press private view of the Exhibition, instituted at the old Society, and rapidly followed by the Royal Academy and other bodies. Mr. Jenkins bequeathed to his Society 1,000*l.* and nine of the best of his collection of drawings by past and present members.

In November last died Mr. H. S. Liefchild, sculptor.

Mr. Louis Haghe, Honorary President of the Institute of Painters in Water-Colours, died on the 9th of March, at the age of 79.

The death of Mr Richard Ansdell, R.A., the well-known animal painter, occurred at Collingwood Tower, Farnborough, Hants, a few days ago.

In a record of matters artistic during the year, it would be ungrateful to pass without a word of praise the reproduction of an old London street by Mr. Birch, in the International Health Exhibition.

A very interesting art-loan exhibition was opened at Brighton in November last,—130 works were exhibited,—almost without exception by eminent masters. There was also a series of rooms intended to illustrate seventeenth and eighteenth century interiors,—containing some quaint furniture and utensils.

At Guildford, in July, was opened an exhibition of works derived from local sources which is worthy of notice. The county-town of Surrey is rich in memorials of bygone days, which go back to a date long antecedent to the Conquest. The stripes on the tower of its most ancient church savour of Saxon building. It was down the Wey that the bier of the fair Elaine floated. Guildford Castle, with its ancient herring-bone brickwork, has traditions of Alfred, and the spot is identified with the Astolat of the poet. In the neighbourhood are met historic sites, as Wotton, still held by an Evelyn; Sutton, with its noble chapel; Loseley, with its Elizabethan windows and its memorials of the Mores. The monuments, plate, pictures, &c., and other works of interest from houses such as these, made this loan exhibition worthy of a visit.

For the second time within seven years a fine collection of pictures, drawings, and other works was formed at Norwich, and was on view last year in the old ecclesiastical building called St. Andrew's Hall. The exhibition contained a large number of old masters, many modern pictures, and a fair gathering of fine pieces of old plate and old French coins and miniatures by Cosway and his contemporaries. The chief attraction was the remarkable display of pictures by what is known as the Norwich School.

Sixty years ago the University of Bonn founded a museum of casts from ancient sculpture for the use of students of classical archæology. Cambridge has, at last, followed this example, at a cost of 12,000*l.*, and no archæologist will tax her with any undue forwardness in the matter. A museum of casts is as necessary to the teacher of art and archæology as a chemical laboratory to the teacher of chemistry. As soon as Cambridge decided that the subject should be taught she was sufficiently logical to provide the proper means of teaching. Coming from the Cast Museum of Berlin, the largest and most complete in the world, which has grown by the accretion of years, it must be confessed that, for beginners at least, the Cambridge museum is the better place for study. Every cast museum must, to a certain extent, be a compromise between ideal arrangement, on the one hand, and the exigencies of space, on the other; but at Berlin constant new acquisitions have pushed this compromise to a point that is perplexing to the unaccustomed eye. Here are gathered together, from sheer want of space, representatives of schools and periods the most diverse. This is rather pleasant than otherwise to the expert, but the eye of the novice is unduly troubled. At Cambridge, classification, beginning where material was far more copious, has had full and easy scope. In the matter of mere chronology he who runs may read.

Following the inauguration of the gallery of casts at Cambridge, an important addition to the many attractions at South Kensington Museum must be noted in the remarkable collection of casts in the new gallery which was opened last August. Here the visitor is enabled to see before him at a glance the progress of Greek sculpture, from the rude efforts and native expression of its childhood to the magnificent development, under Phidias, of an art perfectly balanced, intellectually and physically, and representing the abstract ideal of humanity in the persons of heroes and divinities humanly represented.

It is a satisfaction to know that we have so many productions of the great age of the art left to us, as an eternal possession, now reproduced and multiplied in so many ways that we need never fear their loss, and may consider at leisure in what way we can best turn to account the lessons to be derived from them. The Art-Union may point to the busts of "Clytie" and "Apollo Belvedere," the "Ajax," and the "Townley" vase, to show that we have done something to make known to the public of to-day and to put within easy reach of many a home these embodiments of some of the finest specimens of ancient art. The proximity of this series of casts to the late Health Exhibition, showing the beauty of the physically healthy body, and comparing it with some of the cases into which the human figure has been forced, as exhibited both in the historic dresses and in some of those seen moving about in the building, suggests an appreciation of Shakspeare's remark, "What a deformed thief this fashion is."

Thanks to a majority of more than 100 on the debate in the House of Commons, in reference to the purchase of the Blenheim pictures, the equestrian Charles I. of Van Dyck and the Ansidei Raffaelle, our National Gallery is no longer open to the reproach of containing no first-rate Raffaelle and no great Van Dyck. The two new acquisitions place it at once on a level, in this respect, with the greatest foreign galleries.

It has been suggested to the Council, in several quarters, that an illustrated work, in continuation of the series of the "Norman Conquest," "The Ancient Mariner," and others, all of which are still in constant demand, would be acceptable to the subscribers,—especially as such productions are popular from not involving the additional expense of framing. The Council having been much impressed by the beauty of certain drawings by Mr. Percy Macquoid, R.I.,—exhibited some time since at Messrs. Cassell's,—and by two subjects which he contributed to the volume of "Animal Life," produced by the Art Union, as well as several very meritorious works exhibited by him at the Royal Academy, applied to him in reference to supplying some designs, and Mr Macquoid having suggested Sir Walter Scott's poem of the "Bridal of Triermain" as a theme supplying abundance of material for illustration, the work was put in hand, and a set of fourteen subjects, reproduced by the photogravure process, bound up with the text of the poem, will be the annual presentation work for next year. It may be well to state that these designs are not to be regarded as highly elaborate drawings, but as broad sketches, somewhat after the manner of the Spanish painters, Fortuny and Madrazzo, and representing the modern school of black and white. General effect and powerful handling are aimed at rather than minute accuracy.

In concluding this report we would draw attention to an address,* delivered at the Birmingham Social Science Congress last September by Mr. P. H. Rathbone, with a view to showing the importance of considering the economical value of art, independently of its ethical and scientific value. Mr. Rathbone called attention to the necessity of improving the art of our manufactures and infusing into them a large amount of artistic element. He pointed to the remarkable development of our potteries under the auspices of Josiah Wedgwood, and to the fact that an extensive export trade in wall-papers has been developed since sound art entered into their manufacture. "Cultivate," the speaker said, "the taste of our population by art-galleries and museums, by concerts and theatres, and they will not only patronise them, but they will crave to possess as their own such forms of art to decorate their houses as may be within their means. The very plates and cups in daily use will be, not dearer, but in better and purer taste than has hitherto been the case. Taste will be elevated and purified till a demand for artistic work is created that will overflow the limits of the country and create an export trade which may do much to counteract the loss of supremacy in cheapness, hitherto our mainstay."

The Chairman, in proposing the adoption of the report, said he thought that they ought to be thankful, on looking around them, that they had been able to collect something like 9,000*l.* for the purposes of pure art, and for gratifying those tastes which might, under other circumstances, be smothered. The report had touched on the death of Mr. Holloway. There were thousands of men who hoarded their money to the last moment, and then when they could not

* Printed in the *Builder* at the time. (See p. 451 of our last volume.)

take it with them left it for some great purpose; but the man who applied it to such a purpose during his own life was a true man, and deserved their gratitude. The report also referred to the death of several artists. This was a matter of regret, but at the same time they must congratulate themselves that the vacant places were being taken by rising men, and that though artists died, art was living and flourishing.

Mr. E. E. Antrobus seconded the resolution, which was carried.

Mr. Francis Bennoch proposed a vote of thanks to Mr. E. E. Antrobus and Mr. Zouch Troughton, the Hon. Secretaries, for their continued efforts for the advancement of the Society's progress.

Mr. Hallett seconded the resolution, which was also agreed to.

The Chairman next moved a vote of thanks to Messrs. A. & S. Gatti for granting the use of their theatre for the meeting.

The resolution was seconded by Mr. Hallett, and cordially received.

On the motion of Mr. Bennoch, a vote of thanks was passed to Miss Jessels and Miss Higgins for their kind assistance in drawing the prizes, and to the scrutineers and auditors.

The drawing for the prizes then commenced, the principal prize, Mr. Brierly's picture of "The Vanguard Attacking the Spanish Armada," valued at 210*l*., falling to Mr. John Fore, of Monte Video.

COMPETITIONS.

The Three Cups Hotel, Colchester.—In the competition for the Three Cups Hotel, Colchester, the assessor, Mr. C. F. Hayward, F.S.A., has awarded the first premium to Mr. R. Stark Wilkinson; the second premium to Mr. R. F. Vallance, of Nottingham; and the third to Mr. E. B. l'Anson. A second competition between the above three is to be proceeded with on amended instructions.

Presbyterian Church, Whalley Range.—We learn that the drawings submitted by Messrs. Mangnall & Littlewoods, architects, 29, Brown-street, Manchester, in competition for the proposed New Presbyterian Church of England at Whalley Range, have been awarded the first premium.

OBITUARY.

Mr. G. Packham.—Mr. George Packham, architect, Exeter, died after a few days' illness (the result of cold), on the 23rd ult., at his residence, Exmouth. He was only forty years of age, and leaves a wife and six children to mourn his loss. He succeeded the gentleman to whom he was articled, Mr. Henry Cross, architect, of Exeter, who died from injuries received whilst skating in 1867. Some few years ago, Mr. Packham took into partnership Mr. Croote, formerly one of his own pupils, and since then, until the present time, the firm has practised under the title of Packham & Croote. Although not essentially a church architect, Mr. Packham restored the parish churches at Thelbridge and Venn-Ottery, in a very conservative and careful manner, and his schools in Exeter, Colebrooke, Okehampton, Heavitree, Woolfardisworthy, Whipton, and other places exhibit thought and skill, whilst farm buildings were a speciality with him, some of the most successful in the county having been erected under his supervision. Mr. Packham was also the architect for a number of building estates in the county of Devon, and was, in conjunction with his brother, the architect for various warehouses and business premises in the main thoroughfares of Exeter. He was buried on the 28th inst., at the Exeter New Cemetery, the Mayor (Mr. Brown) and Corporation, together with a large number of the principal citizens, attending the funeral.

Mr. E. Martin.—The death is announced of Mr. Edward Martin (of the well-known firm of Martin, Wells, & Co., builders and Government contractors, Aldershot), which took place on the 16th ult., after a short illness. The business will be carried on by the surviving partners (Messrs. Henry Wells and George Wells), under the same style as before, viz., "Martin, Wells, & Co."

Mr. William Ward Lee.—The death is announced of Mr. William Ward Lee, architect, late of Finsbury-circus. He was for some years architect to the Improved Industrial Dwellings Company (Sir Sydney Waterlow's), and several of the blocks of buildings erected by that company are from his plans.

BUILDING IN PRIVATE WAYS.

A GREAT many buildings of the Artisan class have lately been, or are about to be, erected in the Metropolis, and we think sufficient attention has not been called to the Act of 45 Vic., cap. 45, which was expressly passed by the Metropolitan Board of Works in 1882 to meet buildings of the above character; section 7 of the Act providing that no road, passage, or way should be thereafter formed or laid out for building as a street, either for foot or carriage traffic, without the consent of the Board, if the same did not afford direct communication between two streets. Section 8 of the same Act also provides that no footway should be thereafter laid out without the consent of the Board being first obtained. The first case tried under the above sections was the one of The Board *v.* Hampton. Hampton had erected a cluster of buildings of the above class in a way of less width than 20 ft., and without any outlet, and gates were placed at the entrance, and the way was proposed to be a private one, and was, therefore, supposed by the builder to be out of the provision of the above Act. On the hearing at the Lambeth Police Court he was convicted under the above sections, and, upon appeal to the Surrey Quarter Sessions, the conviction was affirmed, subject to a special case to the Superior Court; but the defendant did not avail himself of this, and has since made the way 20 ft. wide, and given two entrances. Another case of the same character and closed by gates was heard at the same time, and upon the decision in the above case the defendant pleaded guilty, and was fined 20s. on each of the summonses. Notwithstanding the above decisions, large blocks of buildings have been formed in Camberwell, Chelsea, and Poplar. All these buildings are to be closed by gates, and are alleged to be private ways, and proceedings are now pending against them, and, under these circumstances, we think the sections of the Act should be carefully considered before erecting buildings in a carriage or foot way which does not afford direct communication or forming a footway without first obtaining the consent of the Metropolitan Board of Works, as otherwise the builders may sustain very heavy losses while the proceedings are pending, as well as heavy penalties which may now be sued for at any time, and the more especially as we do not think the above sections can be evaded either by putting up gates or other obstructions against ordinary user by the public.

THE TILBURY DOCKS CONTRACT.

KIRK AND RANDALL *v.* WALKER AND ANOTHER.

THIS was an action for libel, involving important matters of interest in connexion with the East and West India Dock Company and their new docks at Tilbury, and tried before the Lord Chief Justice on Monday last.

The plaintiffs, Messrs. Kirk & Randall, are contractors, and for some time previously to the publication of the libel now complained of were employed in the construction of the Tilbury Docks on behalf of the East and West India Docks Company. The defendants are the proprietors of the *Bullionist* newspaper, in which, on October 25th, 1884, the following paragraph appeared:—"Work at the Tilbury extension of the West India Docks Company, which has been interrupted by the failure of the original contractors, Messrs. Kelk & Rendell [meaning thereby the plaintiffs] will be actively resumed on Monday next. The new contractors are Messrs. Lucas & Aird." The publication of the libel was admitted, but the defendants alleged that in publishing it they had acted without actual malice and without gross negligence. They further pleaded that at the earliest possible moment, viz., November 1, 1884, they had inserted a full apology according to the provisions of Lord Campbell's Act (6 and 7 Vict., c. 96), and they had paid into court a sum of 10*l*. 10s., alleging that to be sufficient to satisfy the plaintiffs' claim.

Mr. Webster, Q.C., in opening the case for the plaintiffs, said that the libel complained of was necessarily of a character to do great injury to persons in the position of the plaintiffs. They had proceeded with the work under their contract with the East and West India Docks Company at Tilbury (under which they were to be paid some 700,000*l*.) up to June, 1884. The work had been found to be vastly more difficult than had been anticipated (the soil proving to be quite different from what was expected); that upon the plant, originally estimated to cost only 50,000*l*., the plaintiffs had, in fact, expended upwards of 200,000*l*. They had claimed to be paid by the Dock Company upon a basis which the engineer of the latter had refused to acknowledge. The result of the dispute had been that the Dock Company had taken the work out of the hands of the plaintiffs. There had been no sort of question as to their solvency and stability, and the dispute between the plaintiffs and the company had been solely due to the fact that the parties had taken totally different views of their rights. The plaintiffs' claims against the dock company were the subject of an arbitration now taking place.

The jury gave a verdict for the plaintiffs, assessing the damages at 250*l*.

BUILDERS' PLANT ON THE "HIRE-PURCHASE SYSTEM."

IN RE BARNETT—EX PARTE REYNOLDS AND CO.

THIS case was before the Court of Appeal on Tuesday last, before the Master of the Rolls and Lords Justices Baggallay and Bowen.

The case involved the important question whether a county court judge, sitting in bankruptcy, has power to restrain by injunction an action in the High Court of Justice. It appeared that one Barnett, a builder, was adjudicated a bankrupt in October, 1884, in the Croydon County Court, and a trustee was appointed. At the time of the bankruptcy Barnett was in possession of certain machinery, which he had got from Messrs. Reynolds & Co., Acorn Works, Edward-street, Blackfriars-road, London, on "the hire-purchase system," part only of the purchase-money, which was payable by instalments, having been paid. This machinery the trustee claimed as having been in the order and disposition of the bankrupt at the time of the bankruptcy. Thereupon Messrs. Reynolds & Co. brought an action of detinue in the High Court against the trustee. The trustee applied to the county court judge for an order to stay proceedings in that action, and that he should determine the question of ownership of the machinery. The County Court Judge refused the application, but a Divisional Court, consisting of Mr. Justice Cave and Mr. Justice Wills, reversed the decision and granted the trustee an injunction restraining Reynolds & Co. from proceeding in the action until further order, on an undertaking by the trustee to be answerable for damages and to proceed with the motion in the Court below with due diligence. Messrs. Reynolds & Co. now appealed, and it was stated that the result of the action in the High Court would be of great importance to the trade, as it would be sought to set up a hiring custom in respect of machinery of the kind in question so as to take it out of the reputed ownership clauses, as has been done in the case of hotel furniture and pianos.

At the conclusion of the arguments the Court gave judgment allowing the appeal.

MR. EDWIN CHADWICK, C.B., AND TUBULAR DRAIN-PIPES.

SIR,—Statements have repeatedly been made as to the origination of the tubular system of house and town drainage which implied that I had taken it from some one without acknowledgment. I wrote to the late Mr. John Roe for his account of the first order given on the subject, and the following is a copy of his answer, which I should be greatly obliged if you will insert in the *Builder*.

EDWIN CHADWICK.

East Sheen, April 25.

9, *Albert Villas, Clifton-road, South Norwood*, Sept. 18th, 1869.

Dear Sir,—I have some thoughts of having an account printed of some of the various improvements introduced into sewage matters during the time I was acting under the Commissioners of Sewers in the metropolis. If I should, the salt-glazed stoneware pipe would be amongst the number named. The history is as follows:—

In 1842 Mr. Chadwick was taking evidence for the Poor Law Commissioners' Report on the Sanitary Condition of the Labouring Population of Great Britain. During the intercourse I then had with him, Mr. Chadwick suggested to me the forming tubular pipes of small size for drainage with cement, and to ascertain the cost and efficiency. This I caused to be done at intervals during the years 1843, 1844, and 1845. On seeing Mr. Chadwick thereon he expressed a desire for a smoother surface than the cement or tile pipes presented.

Talking the matter over with some of my clerks of works, one of them (Mr. Medworth) said he had a friend who was a manufacturer of glazed stoneware, and no doubt he would try and make me glazed pipes if I sent him models. I said we would try him, but I would also send to some other stoneware manufacturer at a distance from him. I caused wooden models to be made of pipes, 9 in. and 6 in. in diameter, and 2 ft. in length, and sent to Mr. Northern, who was Mr. Medworth's friend, and to Mr. Davis, whose works were distant from Mr. Northern's.

The pipes were duly completed, and, singularly enough, they arrived at the Holborn and Finsbury Office of Sewers, in Hatton Garden, on the same day (Sept. 9th,

1845). Mr. Francis Wigg, one of our Commissioners, and afterwards our Chairman, coming into the office, and seeing the pipes, recommended them strongly for house drainage.

Such was the commencement of salt-glazed stoneware pipes, and such I should state in any particulars I might publish.

Will you kindly give me your experienced advice on this matter, and I shall feel obliged?—I am, dear Sir, yours very truly,

JOHN ROE.

Edwin Chadwick, esq., C.B.,
Park Cottage, East Sheen, S.W.

COOKING APPARATUS FOR LARGE INSTITUTIONS.

SIR,—In reply to Mr. T. W. Aldwinckle's letter which appeared in your journal [p. 601, *ante*], with reference to the article of the 18th inst. [p. 566] on "Becker's Patent Cooking Apparatus," I beg leave to state the following.

I have been since 1868 well acquainted with Capt. Warren's apparatus, and I am also in possession of a patent; nevertheless, I was induced to inspect the apparatus which is in use in Lambeth Workhouse. I could find there neither a Warren nor an Aldwinckle apparatus; there was only to be seen an apparatus of the firm of Messrs. Benham & Sons, which I, therefore, take as the apparatus in question. This apparatus has nothing whatever in common with my invention, because it is nothing else but an ordinary steam cooking apparatus, such as there have been in use on the Continent for the last forty years. I contest that this apparatus is possessed of any of those fine qualities, specified in and protected by the letters patent which I have taken out, and I declare that neither in this nor in the Warren apparatus is the slightest trace of the peculiar effects of my invention. My apparatus is based on scientific principles which have been discovered, not by me, but some time ago by men like Von Liebig, Sir Henry Thompson, König, &c. It would take too much of your valuable space to go into the details of my invention, but I am prepared to put up in the Lambeth Workhouse one of my apparatus in order to enable an impartial commission to compare the two.

CARL BECKER.

42, *Finsbury Pavement, E.C.*
April 28th, 1885.

P.S.—To facilitate matters, I would gladly take any gentleman, appointed by such commission, to St. Pancras Workhouse, where one of my apparatus is used, and prove to him by ocular demonstration its superior merits.

"ARCHITECTURE IN THE NINETEENTH CENTURY."

SIR,—I shall feel obliged by your correcting a slight error in the report of my lecture "On Architecture in the Nineteenth Century," published on April 25th, p. 582, middle column, 8 lines from the bottom. The words "per annum" should be omitted.

G. AITCHISON.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

153, Cement. R. Stone.

The improvements here consist in a form of grinding-mill, and also in the form of the moulding-machine, and the prevention of choking by vibrating arms under first grinding contact.

298, Opening and Closing Casements and Ventilators. J. Bruce.

A slotted bracket secured to the window has bearing in its ends a screwed bar which can be rotated by an endless cord over a pulley. A nut engaging with a screwed bar has guides to enable it to slide in the slots without turning, and a lug which works in the slot on a plate screwed to the window. When the window opens outwards instead of the plate, a bar may be pivoted to it and the nut. The invention is also applicable to louvre ventilators.

926, Combined Measuring Tape and Compass. B. Whitaker.

The compass is let into the centre of those tapes that are worked by a spring. The tapes operated by a handle have the compass affixed in the knob of the handle.

1,200, Fireproof Floors, Ceilings, &c. P. Scholes.

Slabs of concrete or other fireproof material are moulded with rebated edges, by which they rest upon the joists. When the concrete floor is to be covered with boards a space is left between the slabs, which is filled up with a strip of wood. In some cases the slabs fit in flush between the joists and rest upon fillets nailed to them. For ceilings the slabs may be either of a dished shape or flat, and may rest upon fillets of wood or iron angle-pieces, or when iron joists are used upon the lower flange.

1,587, Transportable Building. W. H. Duncan.

A building is composed of several separate structures, each standing on its own set of wheels, arranged to be connected together to form a complete room for exhibitions or other entertainments. The windows are fitted with shutters sliding on friction rollers and connected together by rods, so that they may, by a handle conveniently placed, be simultaneously closed for the purpose of showing dissolving views. For standing on sloping banks the sections forming the building are without wheels, and are dowelled into a slanting base frame.

1,793, Ventilating or Chimney Cowl. H. A. Phillips.

A shaft is fitted with a curved collar which supports a number of vertical, radial, flat, or wedge-shaped bars. These are surmounted by a cover and support louvres to exclude the wind and the rain.

2,829, Drain Scrapers. J. Birch.

The scraper consists of a long handle formed in lengths which can be screwed together when it is inserted in the drain, and of two spade-like heads, either of which may be attached according to the kind of work to be done,—whether the removal of solid, semi-solid, or liquid matter. Another kind of scraper may also be used for withdrawing paper, rags, straw, and such like material.

13,021, Door Spring. A. McMillan.

A groove is made in the top edge of the door, and a spiral spring placed in it; one end of the spring is locked to a plate in the outer end of the groove. The door will swing both ways, but the tension of the spring will cause it to close at once.

1,224, Combined Lock and Lifting Latch. G. H. Bratt.

The lifting latch is centred in the lock case and the staple of the lock bolt and the catch of the latch are fastened to the front plate. A projection is formed on the outer end of the latch, so that it cannot be raised when the bolt is shot. A light spring presses down the latch, which may be raised either by a knob or a thumb-piece, both of which are attached to it.

2,640, Artificial Marble. A. Quattare.

This is made from any variety of gypsum. The first method is without decomposition, the gypsum is dehydrated by heating to a specified temperature for each variety; then immersed in a bath containing a specified silicate solution for each variety, dried, reheated to a higher temperature, replaced in bath and dried in the air. The various colourings to produce various tints are described. In a second method the gypsum is first reduced to small pieces, then dehydrated, soaked, dried twice, burned and cooled, and finely powdered. The powder is made into a paste with a silicate solution, pressed in moulds, and dried. Other and similar methods, with slight modifications, are also given.

2,764, Entrenching Tool. W. F. Blakeney.

A pick has a broad end formed with a shoulder so that it can be used as a shovel, and a wooden handle fits into a socket, which is cased with hard metal at its end, so that it may be used for tearing down bricks.

5,211, Louvre Bricks or Blocks. J. C. Bothams.

The bricks are made with slanting passages through them for building into walls where louvre openings are required. Several forms of brick are described, which are useful in ventilation, either together or separate. Bricks are also made with slanting recesses in them into which tiles, formed for the purpose, are inserted to be built into the wall for louvre tiling.

APPLICATIONS FOR LETTERS PATENT.

April 10.—4,429, T. Redman, Fixing Sunburners or Ceiling Lights.—4,438, A. Oakden and W. Sharpe, Improvements in Cooking Ranges. — 4,440, S. Wilkins, Burglar or Fire Alarm.—4,441, W. Tapp, Improved Construction of Tiles for Stairs.—4,444, D. Menzies, Ventilation of Houses and other Buildings.—4,449, T. Elsley, Improved Casement Stays.—4,469, B. Hewetson, Securing Slates used to replace damaged slates on roofs of houses.

April 11.—E. Ormerod, Apparatus for Making Paving Slabs, Blocks, Sinks, Manholes, Roofing Tiles, and other similar Articles in Concrete, Terra Cotta, &c.

April 13.—J. Davidson, Ventilation of Soil and Waste Pipes.—4,521, H. Yull, Water-waste Preventer. — 4,539, H. Haddan, Improved Roof Covering.

April 14.—4,564, J. Corcoran and Others, Shaping and Reducing Timber.—4,566, J. Barwick, Improved Ceiling Ventilator.—4,582, G. Grace, Describing Ellipses in various Sizes and Proportions.—4,614, A. Clark, Bolts or Fastenings for Shutters, Blinds, Doors, &c.

April 15.—4,627, J. Watt, Door Springs or Automatic Closing Apparatus.—4,629, J. Miller, Improvements in Ventilators.—4,630, R. Roberts, Opening Doors from the Inside.—4,643, G. Ellis, Portable Dry-earth or Carbon Closet.—4,646, E. Showell, Improvement in Sash Fastenings.—4,663, B. Boothroyd, Automatically Opening and Closing Ventilators.—4,668, W. Wilson, Improved Process of Ornamenting Wall and other Papers.

April 16.—4,681, J. Barwick, Improved Ventilating Pipe and Cap.—4,700, G. Blane, Apparatus for Closing Gates.—4,721, J. Fell, Pneumatic Door Check Spring.

April 17.—4,726, R. Jones, Improved Window Sash Fastener.—4,727, M. Bousfield, Trellised Fire Front for Ranges and Stoves.—4,749, E. Palmer, Apparatus for Flushing Sewers and House Drains.—4,750, A. Elford, Improvements in Paving Blocks.—4,751, J. Garrett, Earth Closet Apparatus.—4,754, G. Osborn, Apparatus for Printing on Wall Paper, &c.—4,759, W. Luther, Sash Bars or Astragals.

April 18.—4,813, J. Bower, Bed-plates for Brick Moulds.—4,819, J. Baker, Disinfecting and Deodorising Apparatus for Water-closets, &c.—4,827, E. Newton, Self-cleansing Cisterns or Tanks.

April 20.—4,851, F. Brown and S. Guinery, Locks and Latches.—4,869, R. Duncan, Improvements in Domestic Fire Grates.—4,873, W. Leggott, Window and Door Fastening Bars.—4,875 and 4,878, W. Lake, Manufacture of Nails.—4,886, J. Eaton and F. Morris, Improvements in Window Sashes.—4,888, T. Lownds, Urinals and Drainage Traps.

April 21.—4,891, R. Stoffert and T. Dykes, Construction of Girders.—4,901, W. Pinkerton, Improvements in Spring Hinges.—4,926, G. Wells, Water-closets and Appliances connected therewith.—4,921, W. and E. Murdock, Improvements in Pavements.—4,937, J. Hopkinson and O. Gibson, Facilitating the Raising and Lowering of Windows.—4,943, F. Humpherson, Improved Joint for Pipes.—4,958, W. Lake, Decoration of Walls and Ceilings.

PROVISIONAL SPECIFICATIONS ACCEPTED.

2,057, S. Cowan, Improvements in Drain Traps.—2,412, J. Tulloch, Improved Sash Window.—2,788, E. Prince, Adjusting and Fastening Windows.—3,183, H. Ransom, Apparatus for Setting Saws.—3,186, W. Royston, Ornamentation of Woodwork.—3,227, E. and A. Marples, Construction of Spokeshaves.—3,714, C. Portway, Improvements in Fences, Dividing Walls, &c.—3,757, W. Miller, Improvements in Washhand Basins or Lavatories.—3,772, C. Anger and P. Gerlach, Improved Cooking Stove.—3,836, W. Brown and H. Clayton, Construction of Sinks and Traps.—3,840, H. Heron, Ventilating Closet, Soil-pit, or Privy, applicable also to Dust-bins.—3,897, J. Johnson, Manufacture of Artificial Stone.—8,174, J. Lamb, Ventilating Appliances.—1,015, C. Stewart and R. Oakley, Electric Bell Indicators.—1,366, W. Thicthener, Ventilating Rooms, and Excluding Draughts therefrom.—3,177, G. Collings, Ventilators for Dwelling-houses and other Structures.—3,802, W. Johnson, Improvements in Walls, Roofs, Partitions, &c.—3,884, H. Haddan, Window Fastenings.—3,916, E. Ormerod and J. W. Horne, Rendering Cements Luminous and Damp-proof.

12,803, E. Robbins, Manufacture of New Concrete Materials.—3,251, G. and E. Hammer, Writing Surfaces for Walls of Schools, &c.—3,488, G. Stephens, Ornamenting Glass.—3,932, J. Homan, Fireproof Floors.—4,067, C. James, Latches or Fastenings for Doors, &c.—4,081, A. Mackie, Improvements in Heating Apparatus.—4,125, Sampson Low, jun., Apparatus for Producing Upcast Draught in Ventilation.—4,131, H. Walker and G. Clark, Improvements in Dust Bins.—4,150, J. O'Callaghan, Securing Door Knobs or Handles to their Spindles.—4,164, W. Stobbs and E. White, Preventing Down Draught in Chimneys, &c.—4,169, G. Holloway and H. Stanning, Window Fasteners.—3,070, J. Garrett, Heating and Ventilating Flues, &c.—3,656, F. Rogers, Improved Vane and Indicator.—3,723, J. Barrett, Apparatus for Opening and Closing Doors in Connexion with Hoists.—3,801, R. Keates, Dies for Tiles, Bricks, &c.—3,945, D. Putzeys, Alarm Extincteur of Fires in Chimneys.—3,956, H. Steven and W. More, Spiral and Other Stairs.—4,205, F. Vergard, Stoves and Fire Grates.—4,512, J. Powell, Cramps for Flooring, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

8,434, J. Garrett, Apparatus for Heating Apartments, also applicable for Preventing Draughts.—6,918, F. and J. West, Building Slabs for Concrete Construction and Method of Manufacturing and using same.—3,228, J. H. Taylor, Improved Method of Constructing Pipe Joints.—8,927, T. Tobitt, Sliding Window Sashes.—8,993, H. Lake, Machines for Crushing Lime, Cement, &c.—12,907, E. Smith, Improvements in, and in Opening and Closing Windows.—15,036, B. Goodison, Manufacture of Cement and Making Articles therefrom.—15,875, W. Leipner, Electric Bell Pushes, Contact Makers, and Indicators.—623, E. Bailey, Securing Door and other Knobs and Handles.—3,021, J. Qurin, Parallel Vices.—3,371, J. Hughes, Rack Pulleys for Window Blinds.—3,383, W. Soutter, Improvements in Water-slide Gaseliers or Gas Chandeliers.—3,405, W. Lake, Improvements in Pavements.—8,174, J. Lamb, Ventilating Appliances.—8,256, B. Reynard, Improved Plates for Building in Concrete.—8,675, W. Middleton, Improved Method of Slating Iron Roofs.—8,683, W. Symons, Floors or Covering for Floors.—9,670, W. Fyfe, Improvements in Ventilators.—9,699, S. Frankenberg, Damp-proof Compound.—10,830, J. Starling, Manufacture of Brass Hinges.—1,457, S. Goslin, Flushing Cisterns, &c.—2,183, A. Boult, Appliances for Cleaning Water-closets, Sinks, &c.—8,325, W. Bayliss, Self-adjusting Pulley for Window Blinds.—9,888, L. de Liebhaber, Colouring Stones for Building, &c.—1,683, A. Clark, Improvements in Lathing.—2,319, T. Normanton, Improvements in Water Pipes and Flushing Cisterns to Prevent Bursting by Frost.—3,711, J. Kritschmann, Improvements in Water-closet Valves.

The Student's Column.

DESCRIPTIVE GEOMETRY.—XIII.

Through the point c draw a straight line passing at given distances from the points a and b.

THIS problem will test the student's capacity of realising in his imagination what our drawings mean in space, for unless he succeeds in doing this, it is hopeless for him to try to follow our diagram.

We must first consider that all the points that are at an equal distance from a given point, *a* or *b*, belong to the surface of spheres of which the points *a* and *b* are the centres, and the given distances are the radii. We conclude therefore that the line we have to draw will be tangent to both these spheres. The lines passing through a point and tangent to a sphere form the surface of a cone; the line required is therefore at the intersection of the cones, which have *c* for apex, and envelope respectively the spheres round the centres *a* and *b*. (See fig. 67.)

If we make two auxiliary elevations, the one by taking the line $a^h c^h$ for $L^1 T^1$, the other with $b^h c^h$ for $L^{11} T^{11}$, we shall have on these elevations the sections of the two spheres; and the tangents to these circles, such as $c^{v1} m^{v1}$ or $c^{v11} m^{v11}$ are the outlines of the cones we have spoken of above; c^{v1} and c^{v11} are the two elevations of the same point *c*, therefore, if we make $c^{v1} m^{v1}$ equal to $c^{v11} m^{v11}$, when the lines in space $c\ m^{v1}$ and $c\ m^{v11}$ rotate round their respective axles $a\ c$ and $b\ c$ the points *m* will meet. The point m^{v11} rotates in the plane P perpendicular to $a\ c$, the point m^{v11} rotates in the plane Q perpendicular to $b\ c$, therefore the point *m*, where they meet, will be on the line *d e* intersection of the planes P and Q. The meeting of the traces P^h and Q^h gives us d^h; thanks to auxiliary horizontal sections I and K by plane R we find e^h; we know that d^{v1} and e^{v1} will be on P^{v1}. If we turn down the plane P round its trace P^{v1} we shall get the circle described by the point *m* in rotating round the axis $a\ c$, and also the line of intersection $e^2\ d^2$ of the

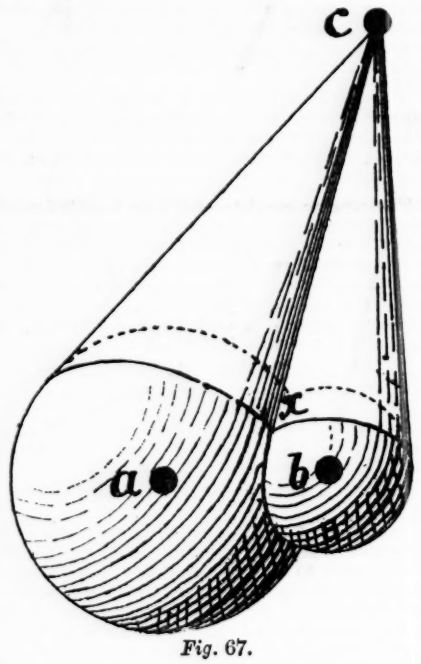


Fig. 67.

planes P and Q, in which the distance $e^{v1}\ e^2$ is equal to $\beta\ e^h$, and $d^{v1}\ d^2$ is equal to $d^{v1}\ d^h$, for both the plane P, which contains the points *e* and *d*, and the plane of the plan, which contains the projections e^h and d^h, are perpendicular to the vertical plane, which contains the trace P^{v1}. The intersection of the line $e^2\ d^2$ with the circle gives us the points $x^2\ y^2$; we find the projections of these points in $x^h\ x^v$ and $y^h\ y^v$, and both the lines which join *c* to *y* or *c* to *x* satisfy the conditions of our problem, which has in this case two answers. The student can easily see also that there would be but one answer, if the spheres were tangent, and no answer if the spheres did not touch one another. (See fig. 68.)

Draw a line through a point O, *and passing at given distances from two lines a b and c d.*

The students who will have been able to master the preceding diagram will find no difficulty with this problem. If we suppose two cylinders having respectively *a b* and *c d* as axis, and the distances given as half diameters, the line reqnired is bound to be tangent to both these cylinders, and, therefore, it is the line formed by the intersection of two planes, R and S, passing through the point O, and tangent to the above cylinders.

In the diagram fig. 69, we have assumed the points *a* and *c* to be in the plan, and the heights of *b* and *d* to be known. We take $a\ b^h$ as L T, and draw the traces of a plane X perpendicular to *a b*. We project the point O on that plane X, which we turn down on the plan with the projection of O thereon, which comes in O^x (this operation is identical to the one we have already seen in fig. 66). We make $o^x\ t^x$ tangent to the base of cylinder round axis *a b*; the plane R, which contains the line $O\ O^x$ and $O^x\ t^x$ is tangent to the cylinder, we get its trace, R^h, by joining β trace of the line $O\ O^x$ with *a* trace of $O^x\ t^x$, which is, of course, in the point where the line $O^x\ t^x$ crosses X^h. In the same way we find S^h the trace of the plane tangent to cylinder round axis *c d* and the point *m*, where the traces X^h and S^h meet, is a point of

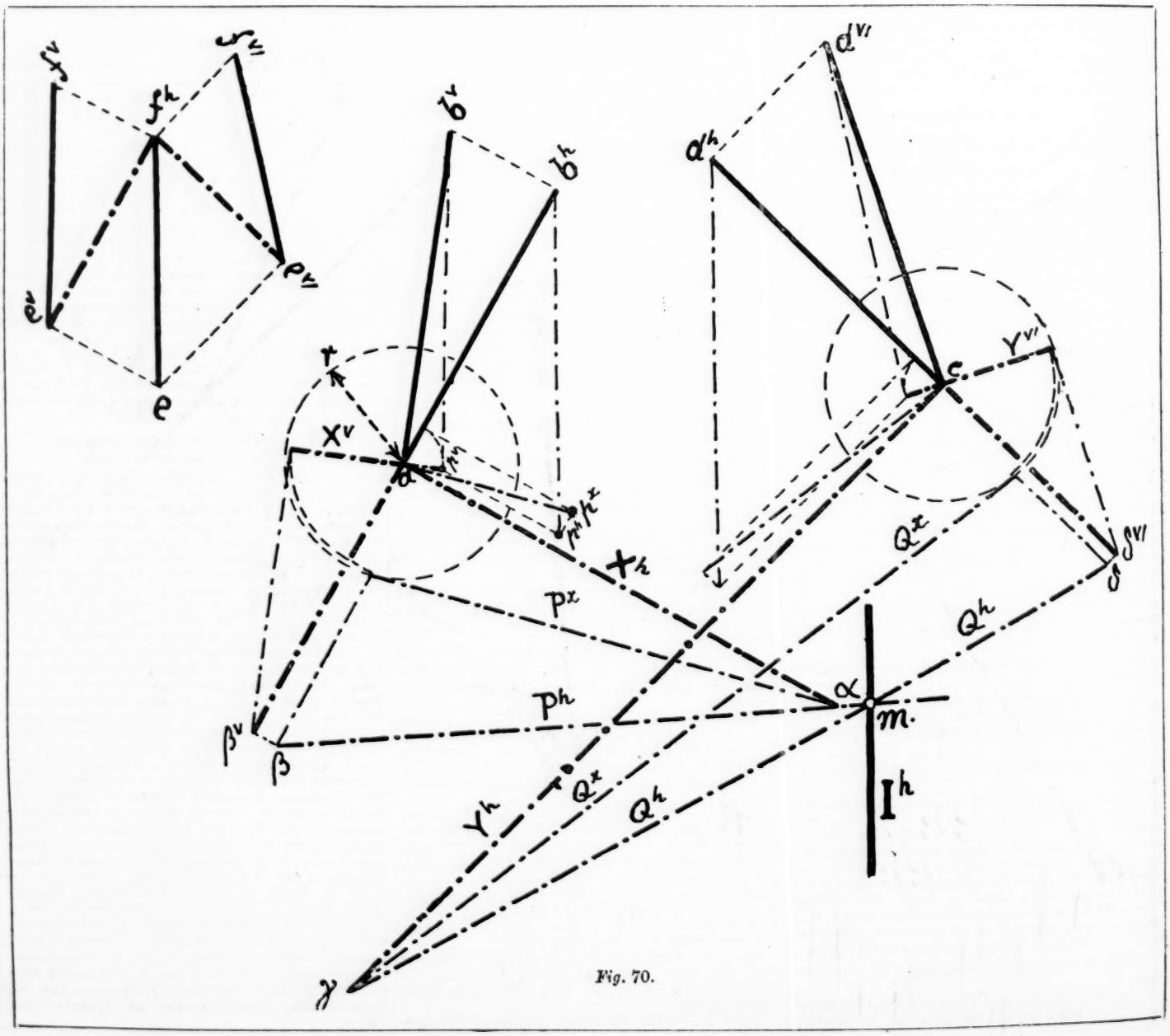


Fig. 70.

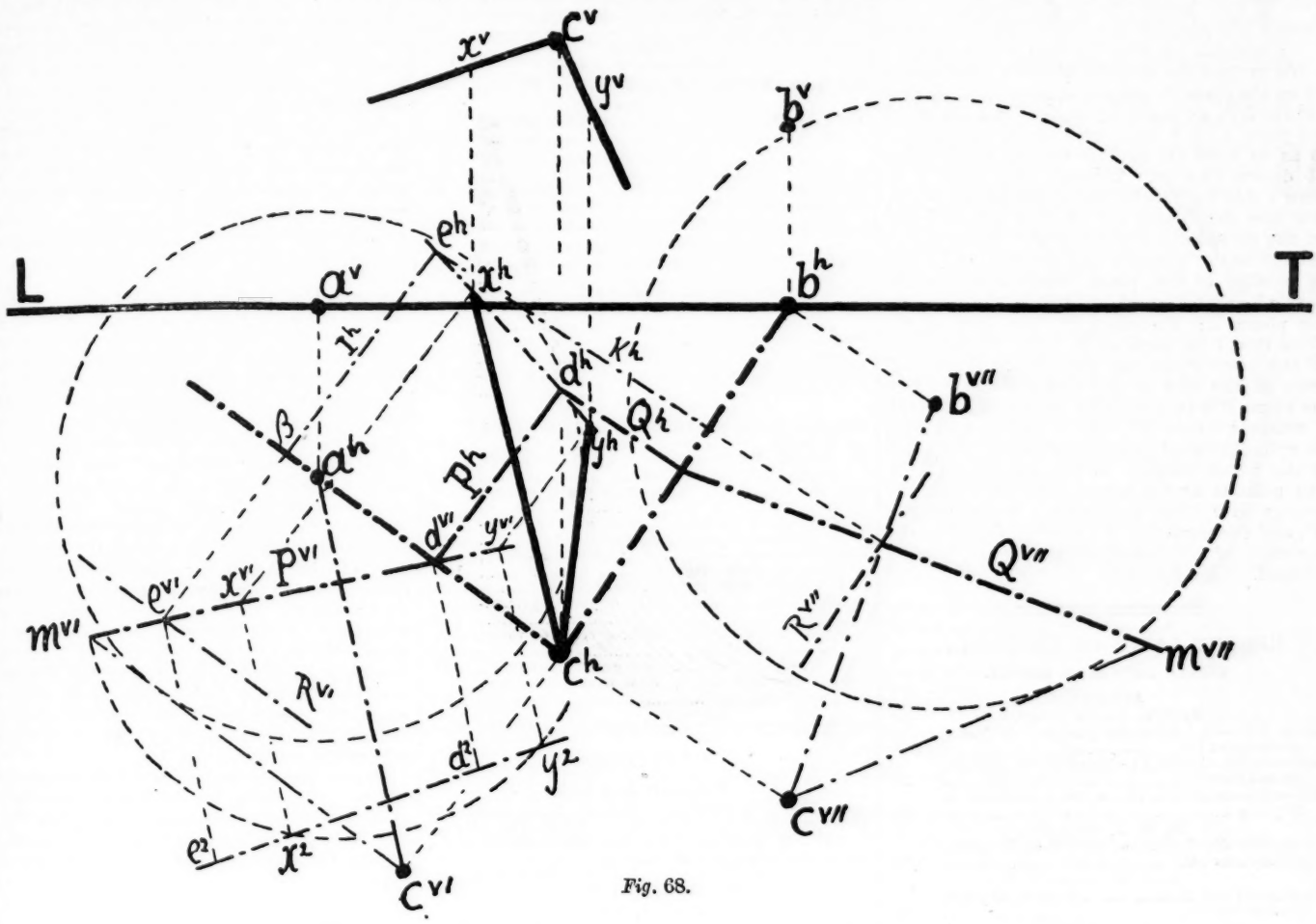


Fig. 68.

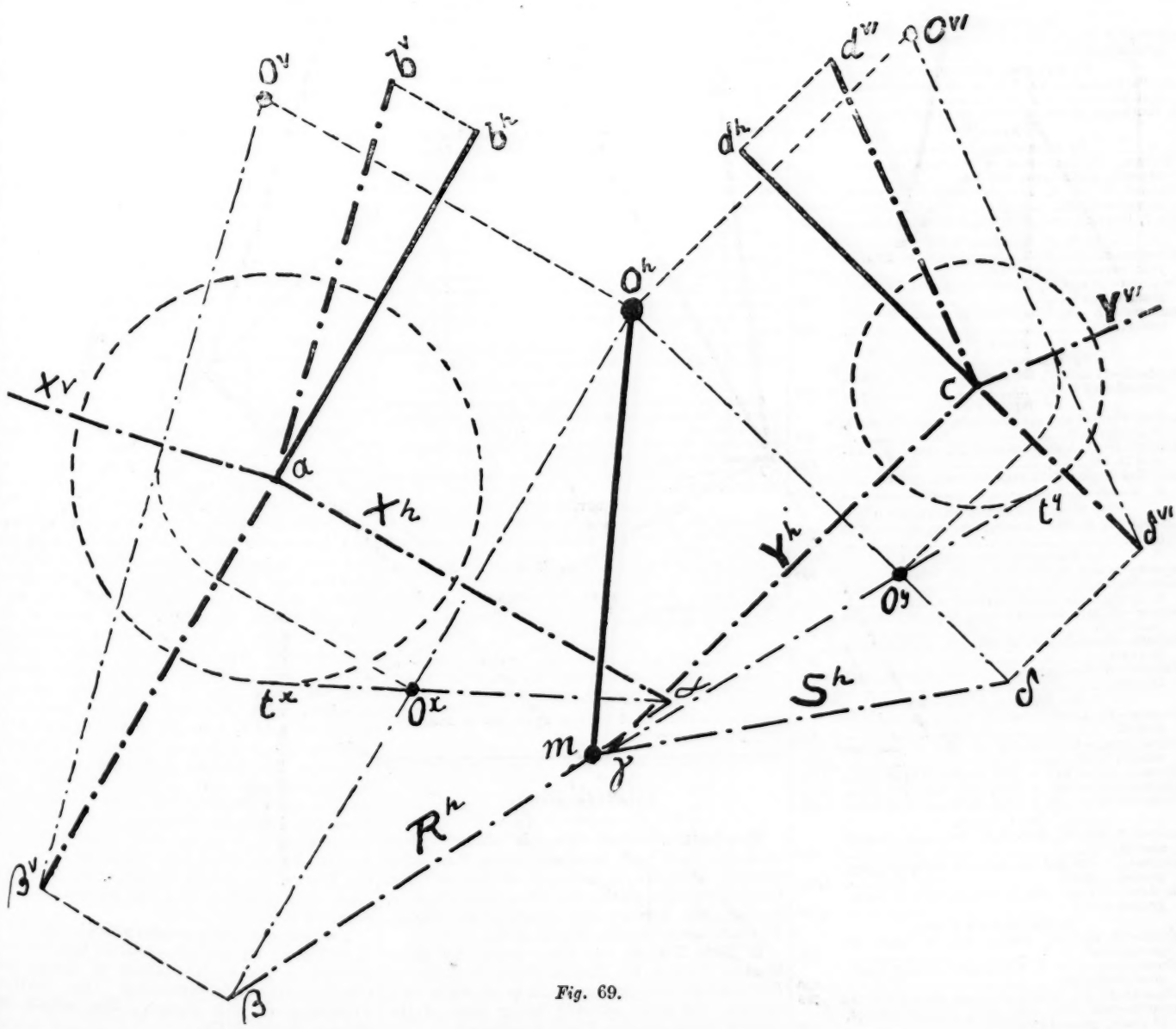


Fig. 69.

the line required, which is, therefore, the line $o\,m$.

Draw a line parallel to a line $e\,f$, and passing at a distance $a\,r$ from the lines $a\,b$ and $c\,d$.

We project the cylinder of axis $a\,b$ and radius $a\,r$ on the plane X, perpendicular to $a\,b$. Taking $a\,b^h$ for L T, we draw X^v and X^h the traces of the plane X, and then turn down the plane X so as to have the circular base of the cylinder $a\,b$ drawn thereon. Through the point b we draw a line $b\,p$ parallel to $e\,f$, the point p where this line penetrates, the plane X will be found on the turned down plane in p^x. The plane P, tangent to the cylinder and parallel to $e\,f$, will be parallel to the plane which contains the lines $a\,b$ and $b\,p$, of which $a\,p^x$ is the trace on the plane X; therefore P^x, the trace of the plane P will be parallel to $a\,p^x$. P^h, the trace of the plane P, on our plan passes through β, trace of the line of the cylinder along which the plane P is tangent, and passes also through a, where P^x cuts X^h. By a similar operation on cylinder round axis $c\,d$ we get Q^h, the trace of the plane tangent to the second cylinder. The point m at the intersection of P^h and Q^h belongs to the line I required. I^h is parallel to $e\,f^h$, and the elevation of I will be parallel to the elevation of $e\,f$, whatever elevation plane be selected. (See fig. 70.)

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

APRIL 20.

By J. H. GREEN & SON.

Maida Vale—15, Clarendon-gardens, 63 years, ground-rent 10*l.*	£630
Hammersmith—14 and 15, Chapel-street, 29 years, ground-rent 5*l.*	280
Ground-rents of 17*l.* 10s. a year, reversion in 29 years	575

By W. J. MURLIS.

Notting-hill—51, Ladbroke Grove-road, 78 years, ground-rent 14*l.*	1,000

By C. W. DAVIES.

Islington—17 and 18, King Edward-street, 20 years, ground-rent 12*l.*	630

APRIL 21.

By BELTON & SON.

Holloway—3 to 11 odd, Citizen-road, 57 years, ground-rent 35*l.*	1,230

By MULLETT, BOOKER, & Co.

Hyde Park-square—No. 5, term 50 years, ground-rent 40*l.*	4,380
3, Southwick Mews, 50 years, no ground-rent	200

APRIL 22.

By RUSHWORTH & STEVENS.

Sydenham, Panmure-road — "Corcyra House," 69 years, ground-rent 25*l.* 10s.	600
Willesden—6 to 9, Lincoln Mews, 74 years, ground-rent 20*l.*	360
4 to 7, Meyrick-road, 83 years, ground-rent 8*l.*	450

By T. G. WHARTON & SHERRIN.

Whitecross-street, E.C.—Ground-rent of 150*l.* a year, reversion in 59 years	3,600
New Cross—10 and 12, Clubworthy-street, 76 years, ground-rent 8*l.*	380
Hammersmith—58, Iffley-road, 95 years, ground-rent 6*l.* 10s.	290

APRIL 23.

By WEATHERALL & GREEN.

Kingsland—51 and 53, De Beauvoir-road, 31 years, ground-rent 4*l.* 10s.	340

By BRITTAIN & SON.

Hackney-road—7 and 8, Gloucester-street, 31 years, ground-rent 3*l.*	405
Kensington—84, Abingdon-road, 76, years, ground-rent 7*l.* 5s.	635
164, Kensington Park-road, 66 years, ground-rent 8*l.*	450

By NORTON, TRIST, WATNEY, & Co.

Holloway—3, Morland-street, 79 years, ground-rent 5*l.* 5s.	305

By PRICKETT, VENABLES, & Co.

Stepney—26 and 28, Caroline-street, freehold	390
Commercial-road—19, 21, and 23, Dorset-street, and 2, Lower John-street, freehold	610
Stepney—25, Ben Jonson's-road, 19 years, ground-rent 3*l.* 3s.	150
Lambeth—Ground-rents of 49*l.* 16s. a year, term 15 years	200
Brixton-road—Ground-rents of 18*l.* a year, term 15 years	125

By NEWBON & HARDING.

Islington—33, Alfred-street, 41 years, ground-rent rent 5*l.*	420
Bethnal-green—Ground-rent of 120*l.* a year, reversion in 52 years	3,150
Ground-rent of 180*l.* a year, reversion in 24 years	5,050
Ground-rent of 65*l.* a year, reversion in 31 years	1,730
Ground-rent of 12*l.* a year, reversion in 33 years	320

By A. BOOTH.

Haverstock-hill—31, Park-road, 64 years, ground-rent 12*l.*	850
Camden-road—25 and 26, Hilldrop-road, 76 years, ground-rent 20*l.*	1,890
Kingsland—138 and 144, Downham-road, 67 years, ground-rent 12*l.*	1,030

By REYNOLDS & EASON.

Dalston—46 and 50, Wilton-road, 67 years, no ground-rent	270
Bethnal-green—1 to 9, Parliament-place, 9 years, ground-rent 45*l.*	920
Fulham-road—No. 6, term 31 years, ground-rent 10*l.*	705
Brompton-road—No. 125, and 11, New-street, 17 years, ground-rent 37*l.*	930
Stoke Newington—17, Gainsborough-road, 74 years, ground-rent 5*l.*	£280
Marylebone—36, George-street, 9 years, ground-rent 12*l.*	185

APRIL 24.

By TOPLIS & HARDING.

Edmonton—8 to 11, Trafalgar-place, freehold	600

By D. J. CHATTELL.

Kilburn—293 and 295, High-road, with stabling, 72 years, ground-rent 125*l.*	2,650

By BAKER & SONS.

Harrow—Nine plots of freehold land	590
Tottenham, Manor-road—Two plots of freehold land	440
Clapham-common—"The Clock House Estate," 15¼ acres, freehold	42,500

By NORTON, TRIST, WATNEY, & Co.

Tufnell Park-road—Improved ground-rents of 198*l.* 10s., 79 years	4,085
Holloway—An improved rental of 27*l.* 15s., 5 years	100
St. Pancras—37 and 38, Barclay-street, 38 years, ground-rent 5*l.*	550
Pentonville—12, South-street, 58 years, ground-rent 1*l.*	345
Gravesend—1, 2, and 6, Pier-road, 51 years, ground-rent 12*l.* 12s.	900

By ROBERT REID.

Oxford-street—11 to 14, Adam and Eve-court, 39 years, ground-rent 48*l.*	1,200
St. John's Wood—13 and 15, Finchley-road, 35 years, ground-rent 22*l.*	1,800
Old Ford-road—No. 81, term 68 years, ground-rent 4*l.*	405
Euston-road—5, Tonbridge-street; and 11, Claremont-place, 21 years, ground-rent 15*l.* 15s.	310
Tavistock-square — 19, Upper Woburn-place, 38 years, ground-rent 28*l.*	1,350
24, Keppell Mews, 56 years, ground-rent 10*l.*	510
Lambeth—95, Cornwall-road, 4 years, ground-rent 9*l.*	25
Marylebone—50, Upper Baker-street, 16 years, ground-rent 8*l.* 8s.	590
17, Crawford-street, 19 years, ground-rent 7*l.* 7s.	340
Golden-square—2 and 3, West-street, 13 years, ground-rent 28*l.*	900

MEETINGS.

SATURDAY, MAY 2.

St. Paul's Ecclesiological Society.—Visit to Merton Abbey and the Churches of Merton and Morden. Papers by Mr. S. W. Kershaw, F.S.A., and Mr. Arthur J. Style. Train from Ludgate-hill at 3.27 p.m.

Edinburgh Architectural Association.—Visit to Ravenscraig Castle, Dysart House, and Dysart.

MONDAY, MAY 4.

Royal Institute of British Architects.—Fifty-first Annual Meeting: Reception of Report, Election of Officers, &c. 8 p.m.

Surveyors' Institution.—Mr. W. Mathews on "The Influence of Taxation upon Rent." 8 p.m.

University College.—Mr. Barclay V. Head on "Greek Numismatics." III. 4 p.m.

Society of Engineers.—Mr. W. N. Colam on "Cable Tramways." 7.30 p.m.

Clerks of Works' Association.—Mr. G. R. Webster on "A Simple Method of Perspective Drawing." 7 p.m.

Inventors' Institute.—8 p.m.

Edinburgh Architectural Association.—Mr. John M'Rae on "Furniture." 8.30 p.m.

TUESDAY, MAY 5.

Society of Biblical Archæology.—M. T. R. N. Cust on "Excavations in Progress or Lately Completed in Egypt." 8 p.m.

Institution of Civil Engineers. — (1) Discussion on Professor Hele Shaw's paper on "Mechanical Integrators." (2, time permitting) Mr. A. M. Thompson on "The Signalling of the London and North-Western Railway." 8 p.m.

Birmingham Architectural Association.— Mr. Franklin Cross on "Public Health and Architects." 7.15 p.m.

WEDNESDAY, MAY 6.

Civil and Mechanical Engineers' Society. — General Meeting, for Presentation of Report, Election of Officers, &c. 7.30 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary Meeting. 8.30 p.m.

Liverpool Architectural Society. — Annual General Meeting. 7 p.m.

THURSDAY, MAY 7.

Society for the Encouragement of the Fine Arts.—*Conversazione* at the Galleries of the Institute of Painters in Water-Colours. 8 p.m.

Institution of Civil Engineers (Special Meeting).—Sir Edward Reed on "The Forms of Ships." 8 p.m.

St. Paul's Ecclesiological Society.—Mr. G. H. Birch on "The Ecclesiology of Paris." 7.30 p.m.

Society of Antiquaries.—8.30 p.m.

FRIDAY, MAY 8.

Architectural Association. — Mr. Percy Hunter on "Leasehold Tenure of Property: its Prejudical Results to London, both Socially and Architecturally." 7.30 p.m.

Society of Arts.—Mr. Robert Pringle on "The Ancient and Modern Methods of Treating Epidemics of Small-Pox in India." 8 p.m.

Miscellanea.

Newbattle.—Two Munich stained-glass windows have just been erected in Newbattle Church, Dalkeith, in memory of the late Mr. Craig, and representing the two acts of Charity, Feeding the Hungry and Teaching the Young. The artists are Messrs. Mayer & Co.

A New Pulpit has been made for Earls Heaton Church by Messrs. Jones & Willis, of Birmingham and London. It is of Riga oak, carved; the style adopted being that of the church itself, namely, Early Decorated.

Shortcomings of the Factories Act.—While it is not to be expected that the business of factories and workshops will go on without a measure of danger from accident and illness, the last return presented to the Home Office on this subject shows that the minimum of avoidable mishap is still far from being attained. A large percentage of reported cases of accident is evidently due to carelessness on the part of employers and employed. Among these are such as arise from insufficient fencing of machinery, from hurry in piece-work, and from the regretable practice of entrusting the cleaning of machinery to young boys or girls. A part of the report of special interest to the sanitarian is that which deals with the atmosphere of work-rooms. Interesting facts are communicated with respect to overcrowding, and the varieties of trade phthisis which are apt to follow the inhalation of many kinds of dust-laden air. Of equal or even greater public importance are the statements contained in this return with reference to the condition of the class known as "sweaters," who supply the market, particularly in the clothing trade, with work done in their own homes. A house-to-house visitation by the Factory Act inspectors during 1884 has further proved the powerlessness of that Act either in controlling working customs or in improving unhealthy domestic surroundings. The Act, indeed, was not meant to extend to the above-named body of operatives. We find, accordingly, that of 1,478 such workrooms visited by the inspectors, 734 were exempt from their jurisdiction in all respects, while 367 were equally free from their sanitary control, though subject to that of the local authorities.—*The Lancet.*

Crown Lands and Street Improvements. At the last meeting of the Metropolitan Board of Works a report was presented by the Works and General Purposes Committee, reporting, for the Board's decision on the subject, the circumstances relating to the claim of H.M. Office of Works, &c., in respect of Crown property in Hemming's-row and St. Martin's-place, required for the Charing-cross to Tottenham-court-road improvement. Mr. F. H. Fowler, in bringing up the report, stated that for this property H.M. Office of Works demanded 57,000*l.*, but the Superintending Architect had valued it at 55,000*l.*, which he considered a liberal valuation. The Commission of Works had refused to allow the matter to go to arbitration. Mr. Driver, as an independent authority, had been called in by the Board, and had put the value on the land at 50,000*l.* It was well that the public should know that the Government was standing in the way of this important improvement being carried out. Mr. Shepherd moved an amendment to the effect "That the solicitor be authorised to settle this matter on the terms specified in the committee's report, or on the best terms that he can obtain for the Board." Mr. J. Jones seconded this amendment, which was carried by twenty-five votes against fourteen, and subsequently put as the substantive motion, and adopted.

Southampton.—The new Primitive Methodist Chapel in South-front, Southampton, was opened on the 7th ult. The style of the building is Early English. It is built in red brick with stone dressings, and is lighted from the front and back walls. The front elevation has buttresses with pedimental cappings, with roll mouldings, and filled in with trefoil sinkings, and the front gable is finished with splayed stone coping and pointed stone turrets and ornamental metal terminals. The front is also filled in with a large four-light pointed and cinque-foiled window, having hollow splayed mullions and jambs and tracery. This window has on each side of it one long two-light window, with moulded tracery jambs and mullions, and is relieved in length with intermediate stones with sunk panels and quatrefoil sinkings. The window arches are of stone, with hood-mouldings and carved terminals. The designs were prepared by Messrs. Kerridge & Sons, architects, of Wisbeach, and the building has been erected under their superintendence, assisted by Mr. Butt, who has acted as clerk of the Works. Mr. Henry Wyeth, of St. Andrew's-road, Southampton, was the contractor. The contract price was 2,500*l.*

Twigworth (Gloucestershire).—A three-light Munich stained glass window has just been erected in the parish church of Twigworth, Gloucestershire, representing Our Saviour Preaching on the Mount. The artists are Messrs. Mayer & Co.

The "Black Autocopyist."—This apparatus, which has lately been considerably improved, affords a very simple and cheap means for the reproduction of documents, circulars, plans, sketches, designs, music, &c. The work done is similar in appearance to lithography, but neither stone nor press is required. The apparatus is light, and, therefore easily portable, and by it from 100 to 150 good black copies can be obtained in lithographer's ink of anything written or drawn with an ordinary pen on ordinary glazed paper, using the special ink provided, which is not only as fluid as the usual writing-ink, but also quite adapted for the use of etching or ruling pens, &c. Tracing-cloth is likewise exceedingly suitable for use. The *modus operandi* is as follows:—One of the prepared parchment sheets is moistened by simply spreading it on the frame of the apparatus and pouring some water on to it. After a few minutes the water is poured away, and the sheet fastened down on the frame and stretched perfectly tight by simply displacing two rollers which are underneath. The original is now placed on the sheet, on which an absolutely correct negative will at once appear. When passing the printing roller over the sheet the latter will,—similar to the lithographic stone,—remain quite clean, with the exception of the negative, which will immediately take the printing ink, and, in its turn, render it to the sheets of paper placed upon it, thus producing clear black copies of the sketch or handwriting, with a precision only to be equalled by that of lithography.

Liverpool Engineering Society.—The usual fortnightly meeting of this Society was held at the Royal Institution, Colquitt-street, on the 22nd ult., the President (Mr. W. E. Mills) in the chair. A paper by Mr. W. Goldstraw, entitled "The Relation between Engineering and Architecture," was read by the author. The relations between engineering and architecture are, on a reduced scale, the relations between science and art. Engineering may be said to be that entire system of knowledge and skill which comprises all mechanical pursuits so far as they supply the material wants of men. Architecture, or the art of ornamental and ornamented construction, as applied to buildings, is the development and refinement of an important branch of engineering. They were both formerly practised by the same persons, but have become separate pursuits on the modern principle of the division of labour, and the requirements of science have made it difficult to follow both professions at once with success. It is desirable that the engineer should be more of an architect and the architect more of an engineer. At the same time the two pursuits should be kept even more distinctively separate than at present. But whilst the engineer or the architect practises his special calling only he should have a considerable knowledge of the other profession. Indeed, as both avocations are concerned with building, it would probably be a successful arrangement sometimes for an engineer and an architect to join in partnership. By this means if the work done were of good quality, they might get many commissions which either of them by himself would fail to secure, or would imperfectly carry out. In such cases the competing professions and the public would be mutually benefited.

York Architectural Association.—On the 23rd ult. the concluding meeting of the Association took place in the saloon of the Victoria Hall, Mr. Wm. Hepper, V.P., in the chair. There was a large attendance. The first subject which came under consideration was the scheme for decreasing the number of churches in York, and Mr. Geo. Benson, Grad. R.I.B.A., moved a resolution to the effect that the Association strongly protested against the proposed demolition of ancient ecclesiastical buildings as scheduled by the City Ecclesiastical Parish Boundaries Committee. Mr. W. Hepper seconded the motion, and it was agreed to unanimously. Mr. B. Priestley Shires, honorary secretary, afterwards delivered an able address on "Theatres, their Planning and Construction." A discussion followed, and a hearty vote of thanks to Mr. Shires for his address was adopted.

Female School of Art.—We are asked to mention that Her Royal Highness the Princess of Wales has graciously consented to be present at the Bazaar in aid of the Extension Fund of the Female School of Art, Queen-square, on the 26th of June next.

Overhead Telephone and Telegraph Wires.—The evidence that is now being placed before the Select Committee of the House of Commons engaged in inquiring into this subject points conclusively to the necessity of legislation for the control of the wires. The rate at which the number of overhead wires has been increasing was shown in the evidence of Col. Haywood, Engineer to the Commission of Sewers, who said that the increase had already become so great in the City that the wires now constituted a grave public nuisance. To show the number of wires stretched across the streets, he stated that there were 320 over Moorgate-street; over Coleman-street, 312; Leadenhall-street, 240; Fenchurch-street, 160; and Queen Victoria-street, eight cables and 408 wires. At one spot in Fleet-street,—viz., at Ludgate-circus,—there were to be counted two cables and 142 wires; across King-street there were six cables and seventy-four wires; and over Cannon-street seven cables and 360 wires. Over some of the streets of the City there were something like from 1,200 to 1,500 lines a mile. With such evidence as this before us, and from the certainty that telegraph and telephone wires will be still more numerous in the future, it seems absolutely necessary to put them underground. We cannot, however, agree with the proposal that the expense of carrying out this work should be borne partly by the local authorities; in other words, by the ratepayers. The public might just as well be expected to contribute towards the expense of replacing level crossings on railways by bridges because the former are dangerous. What appears to be necessary to be done in the overhead wire case,—and done quickly, too,—is to pass an enactment forbidding private companies to erect any more such wires.—*Iron*.

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Painting Barracks, &c.	The Sec. of State for War	*Official*	May 5th	ii.
Paving	Mile End Vestry	J. M. Knight	May 6th	ii.
Sewer Work	do.	do.	do.	ii.
Cast-Iron Pipes, &c.	Swansea Town Council	R. H. Wyrill	do.	ii.
Paving Works	Met. Board of Works	*Official*	May 7th	ii.
Granite	Grdns. Dartford Union	do.	May 8th	ii.
Completion of Additions, Western Hospital	Met. Asylums Board	A. & C. Harston	May 9th	ii.
Making-up Roads	Wandsworth Bd. of Wks	*Official*	May 12th	xiii.
Wood-Paviug Works	St. Mary Abbott's, Kensington, Vestry	do.	do.	ii.
Infant School, &c.	Llanelly School Board	E. H. Lingen Barker	do.	xiii.
Fittings, New Post-Office, Kidderminster	Com. of H.M. Works	*Official*	do.	ii.
New Post-Office, Guildford	do.	do.	May 13th	ii.
Medical Superintendent's House, &c.	Grdns. Paddngtn Parish	A. & C. Harston	do.	ii.
Repairing Roads, &c.	Met. Board of Works	*Official*	May 14th	ii.
Construction of Road	South Acton Estate	C. N. Lailey	May 15th	xiii.
Erection of Houses	G. Morris, Esq.	do.	do.	xiii.
Masonry for Viaducts	Great Western Ry. Co.	*Official*	May 19th	ii.
Asphalte and Wood-Paving	Parish St. James's Vest.	do.	May 21st	xiii.
Cottages, Watch-room, &c.	Admiralty	do.	May 22nd	ii.
Drainage, &c.	Kingsbridge R.S.A.	H. Lidstone	do.	xiii.
Sewerage Works	Colne, &c., Local Board	H. Bancroft	May 25th	ii.
Gas Works	Grdns. Holborn Union	H. Saxon Snell & Son	May 27th	ii.
School Buildings	Christchurch Union	E. H. Burton	May 28th	ii.
Erection of Organ Factory	A. Monk		Not stated	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Surveyor and Inspector of Nuisances	Gdns. Wallingford Un.	100*l.*	May 11th	xviii.
City Architect	Norwich Corporation	200*l.*, &c.	May 20th	xviii.

TENDERS.

For the erection of shops and mansions at White Rock-place, Hastings. Mr. Arthur Wells, 27, Chancery-lane, and Hastings, and Mr. Mark J. Lansdell, A.R.I.B.A., Bedford-row House, Great James-street, joint-architects. Quantities by Mr. Arthur Wells:—

Longley, Crawley	£20,300	0	0
Andrews, Margate	19,402	7	0
Perry & Co., Bow	19,100	0	0
J. Howell & Son, Hastings	18,800	0	0
Sawle, Worthing	18,629	0	0
Staines & Son, Eastern-st., London	18,490	0	0
Jarvis, Tunbridge Wells	18,400	0	0
Peters, Horsham	18,200	0	0
Adcock, Dover	17,492	0	0
E. C. Howell & Son, Lambeth	17,470	0	0
W. J. Rodda, St. Leonards	17,275	0	0
Taylor Bros., Hastings (accepted)	15,995	0	0

For additions to Gunnersbury House, Spring Grove, Isleworth, for Mr. A. H. Johnson. Mr. Geo. Ashby Lean, architect and surveyor, Ealing:—

T. Nye	£628	0	0
F. Adamson & Sons (accepted)	615	0	0

For the erection of a cottage at Crowborough, near Tunbridge Wells. Mr. F. V. Stokes, architect, 3, Essex-road, Acton. Quantities by Mr. A. F. Wrightson, 26, Budge-row:—

Cheesman & Co., Uckfield	£1,540	0	0
Beale & Son, Tunbridge Wells	1,437	0	0
Norman, Burgess Hill	1,343	0	0
Punnett & Sons, Tunbridge Wells *	1,270	0	0

* Accepted.

For the erection of a boundary-wall, and additions to other walls, at the Workhouse School, Hornsey-road, for the Guardians of the Poor of St. Mary, Islington:—

Turner	£213	0	0
Morden	209	10	0
Hales & Brooker	181	0	0
Ward & Bramble	175	0	0
Chard	170	0	0
Wood, Harris, & Co.	170	0	0
Dutton & Graham	168	0	0
Hales & Son	164	0	0
Holding	160	13	6
Brown	160	0	0
King	158	10	0
Dyer & Pain	155	0	0
Hevage	152	0	0
Stevens	141	0	0
Killingback	115	0	0

For building the Chance Memorial Church, Malvern. Mr. Lewis Sheppard, architect, Worcester:—

John Inwood, Malvern (accepted)	£1,240	0	0

For the erection of lace factory, Lenton Boulevard, Nottingham, for Messrs. T. & W. Sampson. Mr. J. Bindon Carter, architect, 3, Clarendon-street, Nottingham:—

W. Bailey, Great Alfred-street, Nottingham	£13,932	0	0
Frank Jay, Collison-street, Nottingham	13,763	0	0
G. Underwood, Talbot-street, Nottingham	13,200	0	0
J. J. Adams, Colville-street, Nottingham	13,000	0	0
Weoll Bros., Curzon-street, Nottingham	12,800	0	0
G. Pillatt & Son, Ropewalk-street, Nottingham	12,515	0	0
F. Messom, Talbot-street, Nottingham	12,137	0	0
G. Brown & Son, London-road, Newark	12,000	0	0
R. Middleton, Greyfriar-gate, Nottingham	12,000	0	0
T. Knight, Martin, near Lincoln	11,885	0	0
C. Baines, Applegate, Newark	11,755	0	0
Thos. Fish & Son, Pilcher-gate, Nottingham	11,720	0	0
H. & W. Butler, Lenton, Nottingham	11,650	0	0
J. Greenwood, Mansfield	11,620	0	0
E. Hind, Edgar-rise, Nottingham	11,577	0	0
Bell & Son, Sherwood-street, Nottingham	11,550	0	0
H. Vickers, Wilford-road, Nottingham	11,516	0	0
R. Dennett & Co., Station-street, Nottingham	11,355	0	0
S. & J. Cargill, New Basford, Nottingham	11,250	0	0
Bott & Wright, Great Alfred-street, Nottingham	11,247	0	0
J. F. Price, Beeston	11,079	0	0
B. Keeling, New Radford, Nottingham	10,844	0	0
Wheatley & Maule, Sherwood-street, Nottingham	10,814	0	0
Lynam & Kidd, Brewhouse-yard, Nottingham (accepted)	10,350	0	0

For the erection of a new malthouse for Messrs. H. A. & D. Taylor, Ware, Herts. Messrs. Davison, Inskipp, & Mackenzie, architects, No. 62, Leadenhall-street. Quantities supplied by Messrs. Curtis & Sons:—

Hitch, Ware	£7,593	0	0
Hunt, Ware	7,488	0	0
Morter, Stratford	7,243	0	0
Brown, Son, & Blomfield, London	6,600	0	0
T. Wontner Smith & Son, London	6,437	0	0
Grimwood & Son, Sudbury (accepted)	6,420	0	0

For widening the north end of North Bridge, constructing a storm-water sewer from Alexandra-street to the River Soar, through the North Bridge abutment, and widening Woodgate along Mr. A. E. Hawley's premises, for the Corporation of Leicester. Mr. J. Gordon, C.E., Borough Surveyor:—

Thos. Smart, Nottingham	£814 2 10
S. W. Pilling & Co., Manchester	794 19 2
J. O. Jewsbury, Leicester	760 9 8
W. H. Kellett, Leicester	697 11 0
T. & H. Herbert, Leicester (accepted)	595 4 1

[Borough Surveyor's estimate, 720*l.*]

For the repaving of the carriageway and portions of the footways of Chelsea Bridge, for the Metropolitan Board of Works:—

Nowell & Robson	£1,695 0 0
Brunswick Rock Asphalte Company	1,450 0 0
Improved Wood Paving Company	1,270 0 0
Mowlem & Co. (accepted)	1,216 0 0

For the maintenance, cleansing, watering, &c., for three years, of the Victoria Embankment, for the Metropolitan Board of Works:—

A. & F. H. Culverhouse, Camden Wharf, Camden Town	£6,592 5 1½
E. & H. Beevers, Union-road, Boro'	6,575 4 3
J. S. Gabriel, Belvedere-road, Lambeth	6,397 5 9½
Williams, Son, & Wallington, 132, Shepherd's Bush-road	6,225 8 9½
Aspinall & Son, Crown Wharf, New North-road	6,149 7 11
W. Webster, 8, St. Martin's-place	5,660 17 11
Nowell & Robson, Warwick-road, Kensington	5,410 19 10
Mowlem & Co., Grosvenor Wharf, Millbank	5,311 13 11
Turner & Son, Stanley Bridge Wharf, Chelsea	5,235 7 0
G. G. Rutty, Bromley-by-Bow *	4,626 10 8

* Accepted.

For the erection and completion of a dwelling-house, No. 7A, Ford-street, Old Ford, for Mr. H. Roberts. Mr. G. A. Dunnage, architect:—

Oldrey	£485 0 0
J. O. Richardson	465 0 0
Steel Bros.	458 0 0
Johnson	441 0 0
Stewart	363 0 0

For alterations to bar-fittings at the Perseverance Tavern, Lupus-street, Pimlico, for Mr. McCallingham. Mr. Geo. Treacher, architect, 23, Carter-lane, St. Paul's:—

Ellis & Co.	£346 0 0
Turtle & Appleton	270 0 0
G. T. Williams	260 0 0
J. Beale	259 0 0

For rebuilding the Rum Puncheon Public-house, Upper Whitecross-street, for Mr. Cain. Mr. Geo. Treacher, architect, 23, Carter-lane, St. Paul's:—

Lidstone	£2,525 0 0
Waddington	2,329 0 0
Turtle & Appleton	2,274 0 0
Shurmur	2,060 0 0
Jackson & Todd	2,045 0 0
J. Beale	1,920 0 0

For the erection of wind-screens, Bournemouth Pier, Bournemouth, Hants, for the Bournemouth Improvement Commissioners. Mr. R. W. Peregrine Birch, engineer. Quantities by Messrs. Curtis & Sons:—

Crook, Southampton (accepted)	£2,088 0 0

For engineering fittings at the New Workhouse, Wandsworth, for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, 2, East India Avenue, Leadenhall-street:—

Jeakes	£8,650 0 0
Benham	6,800 0 0
Berry	6,250 0 0
Fraser & Fraser	6,159 0 0
Hunt & Son	5,875 0 0
May	5,800 0 0
Kirk & Randall	5,120 0 0

For reinstating premises damaged by fire, adjoining the Crooked Billet Tavern, Shadwell, for Messrs. Drew & Son. Mr. William C. Livermore, architect and surveyor:—

Nicholls	£210 0 0
England & Thompson	193 10 0

For repairing and decorating the Public Hall, Hastings, for the Hastings Assembly-room Company. Mr. Arthur Wells, architect, 27, Chancery-lane, and at Hastings:—

F. Foster	£136 0 0
A. Vidler (accepted)	120 0 0

For alterations and additions to stabling, farm buildings, &c., at Holmleigh, Brenchley, Kent, for Captain Finch. Mr. Alfred J. Hopkins, architect, 10, Berners-street, London:—

G. & F. Penn, Pembury	£268 15 0
M. Tully, Tudeley, Kent (accepted)	229 0 0

For the restoration of the parish church at Oldbury-on-Severn. Messrs. Waller, Son, & Wood, architects, Gloucester:—

D. C. Jones & Co.	£2,289 0 0
J. Roach & Sons	1,944 0 0
A. King	1,888 0 0
E. Burton	1,663 0 0
J. Wilkins	1,640 0 0
Restall & Son	1,639 0 0
Wall & Hook	1,540 0 0
J. E. Davis	1,495 0 0
T. R. Lewis	1,447 0 0
C. Gyde (accepted)	1,421 0 0

For painting and decorating interior of Constitutional Club, Bedford-street, Exeter, under superintendence of Mr. Octavius Ralling, architect:—

Jno. Algar, Gandy-street	£145 0 0
Edwin Algar, South-street (accepted)	119 0 0

[Architect's estimate, 145*l.*]

Congregational Church, Croydon.—Messrs. S. Belham & Co., of 155, Buckingham Palace-road, write to point out that in the list of Tenders for this building, in last week's *Builder*, by some mistake their name appeared as "Pelham, 10,293*l.*," &c. It should have been Belham, S., & Co.

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